

# EPA MEETING - DISCUSSION

- APRIL 2, 2015
- 1:00 - 3:00 PM

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CCA EJ

Center for Community Action and Environmental Justice

March 5, 2015

*Jared Blumenfeld, Regional Administrator*  
U.S. Environmental Protection Agency

*Kathleen Johnson, Director of Enforcement*  
U.S. Environmental Protection Agency

*Nicole Moutoux, Brownfields/Assessment, Superfund Division*  
U.S. Environmental Protection Agency,

*Mathy Stanislaus, Assistant Administrator, Office of Solid Waste & Emergency Response*  
U.S. Environmental Protection Agency,

*Matt Rodriguez, Secretary*  
California Environmental Protection Agency

*Barbara Lee, Director*  
Department of Toxic Substances Control

*Kurt Berchtold, Acting Executive Officer*  
Santa Ana Regional Water Quality Control Board

*Jeff Brandt, Director of Wildlife*  
California Department of Fish and Wildlife

*Barry Wallerstein, Executive Director*  
South Coast Air Quality Management District,

The Center for Community Action and Environmental Justice is writing in urgency to bring to your attention concerns regarding Riverside Agriculture Park. Currently, this site is moving toward building homes on this contaminated land which we believe has not been adequately characterized and appropriately remediated. We request your immediate investigation into this critical and urgent situation. And that all activities be stopped until a full investigation is completed and all investigation under the appropriate federal and state regulations have been completed.

The Riverside Agriculture Park was formerly part of Camp Anza, a WWII era training and staging ground for army troops. Sometime during World War II, the U.S Army constructed and operated a sewage treatment plant ("Plant") on the site. Following the end of World War II, ownership of the Plant was taken over by several now-defunct community district organizations and the service area for the Plant expanded to include Rohr as an industrial user and commercial and residential customers located in the vicinity of the site. The treatment plant accepted waste from industrial, commercial, and residential customers after the war. The City took over the

ownership of the site in 1962 and closed the plant in 1965. The City continuously owned the site from 1962- May, 2006. This document presents a list of environmental issues involving the remedial excavation activities conducted to remove and dispose of soil containing compounds of concern, including PCBs. The urgency in this matter is that a spill occurred in June, 2003 and a Voluntary Clean Up Action was planned. The consultant reports for the Agriculture Park Clean Up did not include the 10,000 gallon spill of PCB contaminated sludge which occurred June, 2003 or the 40,000 gallons of PCB contaminated sludge which was illegally transported to the new Acorn Sewer Treatment Plant in July of 2003. This is just one of many violations that occurred during the clean-up phase that is mentioned below.

The Riverside Agricultural Park (Envirostor#: 3349007) Voluntary Clean up did not properly address the items below thus endangering the residents, public and the environment.

1. Camp Anza (FUDS#: J09CA0267) (Envirostor#: 3397009) lists the Riverside Agricultural Park Sewer Treatment Plant, waste-sewage treatment ponds as a Formerly Used Defense Site(FUD#J09CA0267) which has potential ordinance, explosives (UXO, MES) and chemical warfare material contamination; this site is listed as inactive and has not been investigated or characterized by the Camp Anza lead agency, the Santa Ana Regional Water Board; California Regional Water Quality Control Board, Army Corps.Of Engineers or DTSC. This presents a grave threat to the residents living on three sides of this property and to construction crews who are presently digging trenches for sewer pipes.

(Please note the sewer treatment plant and the waste-sewer treatment ponds were place under FUDS#: J09LA026701 ✓)

2. The groundwater is contaminated with PCBs, perchlorate, total lead, thallium, dioxin, and furans per consultant's reports. The Santa Ana Region, Regional Quality Control Board has listed the groundwater being under this site as beneficial use for domestic water. Groundwater lab tests indicate PCB(Arochlor 1248) level ranging from 1ug/L – 19ug/L which is well above the maximum contaminant level (MCL) of .5ug/L. Total lead was detected at concentrations of 36.0 ug/L to 41.6ug/L in groundwater samples which is well above the "action level" for lead in groundwater of 15ug/L. Thallium was detected at a concentration of 23.3 ug/L in the groundwater sample which is well above the MCL of 2ug/L. Groundwater was estimated to flow toward the north at an estimated gradient of 0.023 feet per foot on September 17, 2005; it should be noted that the groundwater flows directly into the Santa Ana River which is a primary source of drinking water for Orange County; this poses a real threat to degrading the river's water quality. (refer to Frey Environmental Report dated Oct. 11, 2005) ✓

3. The voluntary clean up goal for PCBs was set at .22 mg/kg for soil on site; stormwater from this site will carry PCB contaminated soil into the Santa Ana River causing the degradation of a known domestic drinking water source.

Also, the site was not properly characterized according to Federal EPA SW846 grid sampling protocol. Areas of the property were not sampled and not all samples were tested for the full



range of contaminants such as metals, explosives, perchlorate, dioxin and furans are some of the most toxic chemicals known to science.

4. A survey of the residents surrounding the Ag Park indicates an elevated number of cancers which could indicate a cancer cluster. DTSC did not medically evaluate each resident for health issues before and after the clean-up; this should have been performed by a board certified M.D. Toxicologist.

5. Dust Monitoring logs indicate differential PM<sub>10</sub> levels ranging from 51.0 ug/m<sup>3</sup> to 275.3 ug/m<sup>3</sup> for 13 days covering the period from July, 2013 – January, 2014. This exceeds the maximum health level of 50ug/m<sup>3</sup> for PM<sub>10</sub> set by AQMD Rule 403 thus causing the contamination of adjoining residential property and injuring the lungs of residents. This AQMD Rule 403 were not addressed by the consultants and DTSC never reported these violations to SCAQMD. The consultants identified the property as a Riverside City Disposal Site for excavated sidewalks and roadways but did not advise SCAQMD and submit "AQMD Rule 1150" excavation management plan. The consultants did not follow AQMD Rule 1150, they did not obtain Rule 1150 excavation permit; the consultants did send an action level for PCB contaminants of a PM<sub>10</sub> of 7ug/m<sup>3</sup> above which would indicate potentially elevated levels of PCBs in the air.

The PM<sub>10</sub> levels were well above the 7ug/m<sup>3</sup> for 53 days of the clean -up covering July, 2013- January, 2014, thus contaminating residential property and exposing the residents to PCBs. These violations of Rule 1150 were not submitted to SCAQMD by the consultants or DTSC; Rule 1150 requires the project to stop until SCAQMD approve mitigation measures.

6. Evidence indicates the Sewer Treatment Plant main sewer is contaminated with PCBs and should be removed and disposed as a TSCA waste. Riverside City identified ROHR as the source of the PCBs and identified them as the responsible party under CERCLA but did not inform Riverside County or DTSC of this fact. The pipeline from the sewer treatment plant back to ROHR(B.F. Goodrich) requires sampling and possible removal as a TSCA waste; also storm drain cross connections at ROHR (B.F. Goodrich) need to be identified.

7. No radiation survey as required at all Federal Superfund sites (Standard Federal EPA Superfund site)

8. A Riverside City legal document indicates that a city employee transported dirt from the Riverside Agriculture Park to specific offsite street locations from 1984 to 1987/1988, therefore contaminated soil may be present at these locations; this was not noted in any of the consultants reports or information submitted to Riverside County Environmental Health Department.

9. Consultant reports for the Agriculture Park did not address the 10,000 gallon spill of PCB contaminated sludge which occurred June, 2003 or the 40,000 gallons of PCB contaminated sludge which was illegally transported to the new Acorn Sewer Treatment Plant in July of 2003.

10. Concrete structures on site were not decontaminated according to TSCA requirements prior to demolition. Large amounts of concrete was crushed on-site and has been designated for use on-site; this crushed concrete requires testing according to TSCA procedures.

11. Decontamination/disposal of metals (pumps, piping) and wood parts was never addressed to TSCA requirements. What happened?

12. Consultant reports did not address a detailed review to identify backup diesel generators with diesel underground storage tanks, possible electrical transformer banks on-site. Who and how was the electricity supplied to the WWII Camp Anza Sewer Treatment Plant.

**Request Summary:**

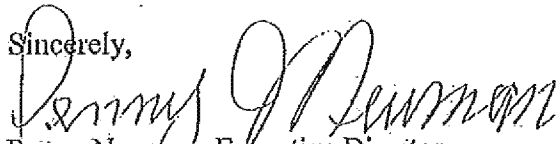
We are requesting a full transparent investigation by DTSC inspection staff and criminal investigators, SCAQMD inspection staff and investigators and Santa Ana Region, Regions Water Quality Control Board, staff assigned to Camp Anza and investigators. Also, U.S. EPA Criminal investigators should be notified of the TSCA violations. We are also requesting that the clean-up be referred to US EPA due to the FUDS listing and failure to abide by the Federal TSCA clean-up requirements. We would like to set up meetings with each agency to give copies of documentation and evidence.

**Agencies and Identified City Council of Riverside:**

We are currently arranging appointment times to meet with each agency to provide a more in-depth information to this serious environmental problem. We are asking that each City Council identified in this document to contact CCAEJ directly and arrange for a time to meet.

**CCAIEJ Office #(951) 360-8451. Please ask to speak with Penny Newman or Jean Kayano.**

Sincerely,



Penny Newman, Executive Director

CCs: Barry C. Groveman, Esquire: Musick, Peeler & Garrett, LLP  
Riverside City Council Members: Andy Melendrez; Mike Soubirous; Paul Davis;  
Riverside City Manager: Lee McDougal

# 1

DEFENSE ENVIRONMENTAL RESTORATION ACCOUNT  
PROJECT DESCRIPTION  
CAMP ANZA  
RIVERSIDE, CALIFORNIA  
PROJECT NO. J09CA026700

FUDS

1. INTRODUCTION.

At the request of the Huntsville Division, the Los Angeles District performed a site inspection to assess possible hazardous and toxic waste contamination and debris at the former Camp Anza. Two separate problems were found to exist: The remnants of a sewage treatment plant consisting of concrete structures (Project No. J09CA026701) and numerous sites where fuel storage tanks were abandoned and where industrial type solvents may have been used and possibly dumped (Project No. J09CA026700). The two problems are unrelated and due to the complexity of the latter, it was decided to split Camp Anza into two reports. The fuel tanks and possible contamination by hazardous materials are dealt with in this report.

2. PURPOSE OF REPORT.

This report supports a recommendation for Department of Defense (DOD) approval, under the Defense Environmental Restoration Account (DERA) program, of a potential hazardous and toxic waste contamination project at this former DOD installation. The inventory report consists of the following:

a. Project description (part I), supported by:

1. Site survey summary sheet (attachment 1).
2. Project cost estimate (attachment 2).
3. Site maps and photographs (attachment 3).
4. Contamination Summary (attachment 4).
5. Detailed site history and disposition (attachment 5).
6. Supporting data (attachment 6).

b. Determination of DOD eligibility (part II).

c. Policy considerations (part III).

d. Project recommendations (part IV).

e. Hazardous Ranking System evaluation (part V).

3. DESCRIPTION OF SITE AND PAST USE.

- a. The project is the former Camp Anza, now an incorporated portion of the City of Riverside and under numerous ownerships.

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b. The site is located about 45 miles east of Los Angeles in the Arlanza Village district of the City of Riverside in Riverside County, California, as shown on the location map in attachment 3.

c. Camp Anza, also known at one time as Arlington Staging Area, was acquired in 1942 and 1943 by the U.S. Army for use as a staging area for troops embarking from the Los Angeles Port of Embarkation and later as a Disposition Center, handling debarkees only. The camp contained facilities for housing, training, and equipped approximately 7,000 men with emergency capacity for 10,000. Effective 12 February 1946, Camp Anza was placed in the category of surplus. Since then, the approximately 1240 acre site has been transformed to an area of numerous homes, schools, churches, commercial and industrial buildings. Some of the northern portion remains undeveloped, however, this situation is changing rapidly as new houses are being built. The city owns some of this land and has started construction of an agricultural park. Rohr Industries, Inc. owns about 80 acres of the central portion of former Camp Anza, on the south side of Arlington Avenue. Rohr Industries purchased the site in 1952 and manufactures aircraft parts there.

#### 4. SITE VISIT.

On 30 October 1986, Mr. Tony Nefas (SPLPD-WF) met with Mr. Larry Sordella, Manager of Environmental Affairs at Rohr Industries, Inc. at the their plant in Riverside which occupies a portion of former Camp Anza. His address and telephone number are: Foot of H Street, Chula Vista, California 92012-0878 and (619) 691-2471. Current conditions of the entire former Camp Anza area were noted during this visit.

CONTAMINATION SUMMARY  
FOR  
PROJECT NO. J09CA026700

1. It is not known how many of the 59 fuel storage tanks installed at Camp Anza remain today. The City's Department of Public Works, the Hazardous Materials Section of the City's Fire Department, the Hazardous Materials Branch of the County Department of Health and Rohr Industries were contacted and provided maps of former Camp Anza with location of the buried fuel tanks marked to help account for the original 59 tanks. Only three of the tanks were accounted for. Two tanks were recently removed by Rohr Industries and were found to have contaminated the surrounding soil. One tank was removed on September 26, 1986, by Cal West National Bank from their property at 8233 Cypress Street.

2. Data from soil borings and a water monitoring well from the site on Cypress Street are attached. Although the conditions at this location may not be typical of all 59 sites where fuel tanks were buried, they are indicative of potential problems that may exist. Sampling of the soil in the pit where the fuel tank was removed indicated considerable contamination. Total Petroleum Hydrocarbons (TPH) were found to be 5000 to 6000 ppm.

The soil was removed and additional testing of the tank pit sidewall area was ordered. Results of these tests show a soil TPH concentration of 2000 to 4000 ppm at 12 feet below grade and less than 70 ppm at the pit bottom (17 feet below grade). Significant chlorinated hydrocarbon contamination was confirmed in the monitoring wells.

3. Rohr Industries was ordered to install a number of test wells by the SARWQCB after a recent spill of TCA on their property. The test wells revealed considerable contamination of the ground water by TCA and numerous other contaminants which, according to a SARWQCB official, could be attributed to Rohr's operations. Rohr was issued a cleanup and abatement order by the SARWQCB as a result of their findings. Rohr Industries hired James M. Montgomery, Consulting Engineers, Inc. to assess the situation and recommend a clean up procedure that would comply with the State's order. The consultants' findings are contained in a report entitled, "Remedial Investigation Study of the Underground Aquifer at the Rohr Riverside Facility." Copies of the report have been requested, however, they have not been received as of this date. A few plates from the report were made available earlier and are included in this section. These plates show the location of test wells, TCA, TCE, and MEK concentrations, bedrock elevations, and ground water information. One of the plans to clean up the ground water being considered by Rohr Industries is to install a series of dewatering wells on the downstream end of the ground water gradient.

4. Representatives of Rohr Industries feel that the DOD is responsible for some of the contamination of the ground water due to the fuel storage tanks and the solvents that were likely used at some of the Camp Anza facilities and possibly dumped on site.

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DETAILED SITE HISTORY AND DISPOSITION  
FOR  
PROJECT NO. J09CA026700

1. Prior to the War Department's acquisition of the Camp Anza property, the land was in private ownership. Use of the land consisted of unimproved dry farm land, grain land, irrigated farm land and a small airport. Approximately 625 acres of the approximately 1240 acres of land acquired for Camp Anza was outleased by the Government under two leases for agricultural and grazing purposes..

2. The Adjutant General, on 6 February 1942, requested the establishment of a staging area in the vicinity of the Los Angeles Port of Embarkation. The office of the Chief of Engineers thus requested the Under Secretary of War to authorize the acquisition of land for this project on 8 May 1942. Acquisition of property for this project took place during 1942 and 1943. Of the 47 tracts comprising this project, 30 tracts were acquired in fee from private owners either by direct purchase or condemnation. Eleven of the tracts were easements and 6 were permits from the City and County of Riverside.

3. Improvements at Camp Anza consisted of approximately 562 buildings, including a 250-bed hospital, heating, water, power, lighting, sewer, and telephone systems and approximately 5 miles of railroad spur track. A sewage treatment plant was built that consisted of 7 pumping units, a 364,000 gallon lagoon, 6 sludge beds, 2 aeration ponds, 1 digestion pit, and 1 chlorination pit. Detail listings of the improvements can be found in attachment 5. Attachment 3 contains a plan of Camp Anza indicating the location of the improvements.

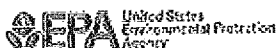
4. Camp Anza was placed in the category of surplus effective as of 12 February 1946, and transferred to the War Assets Administration effective 30 September 1946. The Riverside County Board of Supervisors expressed, their interest in acquiring the property to help alleviate a serious housing shortage, through a resolution on 16 February 1946. At present, there are numerous ownerships of properties once part of Camp Anza. The approximately 80-acre site owned by Rohr Industries was purchased in 1952 from the Bill Jacob Scientific Company which had planned to do contract work for the Dept. of the Navy, however, could not because of Navy cutbacks.

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camp anza

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## National List of Beaches

<http://www2.epa.gov/beaches/national-list-beaches-reports>

National List of Beaches Reports

## Attachment A - Legacy-AWS EPCRA Violations

<http://www2.epa.gov/enforcement/final-order-re-new-cingular...>

This is the AT&T Final Order and Consent Agreement

## APPENDIX D - VIOLATIONS BY COUNTY

2012-09-19

<http://www.epa.gov/quality/informationguidelines/documents/...>

... AMADOR Total Coliform - Monitoring, Routine Minor Absence

0300006 CAMP

RITCHIE 800 1 ... Absence 0300022 CAMP WINTON 1000 1 ...

## APPENDIX C - VIOLATIONS BY INDIVIDUAL CONTAMINANT

2012-09-19

<http://www.epa.gov/quality/informationguidelines/documents/...>

... 2500 1 Nitrate (As No3) 45 3710305 ANZA BORREGO SP - HORSE CAMP

50 1 Nitrate (As No3) 45 4100510 REDWOOD TERRACE MUTUAL ...

[More results from

[www.epa.gov/quality/informationguidelines/documents](http://www.epa.gov/quality/informationguidelines/documents)]

## Newmark Groundwater Contamination (Site ID ...

2014-04-09

<http://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/362a770857df4...>

... 34926 4/10/1997 Deposition of Harold Augustin re use of

trichloroethylene

(TCE) to clean small arms weapons at **Camp Anza Ordnance Shop** ...

X[

## SITE MANAGEMENT PLAN AREA IV RADIOLOGICAL STUDY ...

2014-04-14

<http://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/3dc283e6c5d60...>

Page 1. SITE MANAGEMENT PLAN AREA IV

RADIOLOGICAL STUDY

SANTA SUSANA FIELD LABORATORY SITE VENTURA ...

[More results from [yosemite.epa.gov/r9/sfund/r9sfdocw.nsf](http://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf)]

## Fair Act Reports Inventory 2002

2012-06-01

<http://www.epa.gov/oig/reports/2002/fair2002epaig.pdf>

... BASE ANDREWS BRIDGE ANDRUS ISLAND ANDYVILLE

ANETA ANETH

ANGEL FIRE ANGELA ANGELICA ANGELS **CAMP** ANGELUS

OAKS ...

## US Environmental Protection Agency List of Municipal Solid ...

2012-04-04

5

# List of explosives used during World War II

From Wikipedia, the free encyclopedia

Almost all the common explosives listed here were mixtures of several common components:

- Ammonium picrate
- TNT (Trinitrotoluene)
- PETN (Pentaerythritol tetranitrate)
- RDX
- Powdered Aluminum.

This is only a partial list; there were many others. Many of these compositions are now obsolete and only encountered in legacy munitions and unexploded ordnance.

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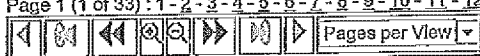


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Emergency  
ResponseEPA/600/R-91/001  
November 1991

## EPA Federal Facilities Forum Issue

FIELD SAMPLING AND SELECTING ON-SITE  
ANALYTICAL METHODS FOR EXPLOSIVES  
IN SOILA. B. Crockett<sup>1</sup>, H. D. Craig<sup>2</sup>, T. F. Jenkins<sup>1</sup>, and W. E. Sisk<sup>3</sup>

The Federal Facilities Forum is a group of U.S. Environmental Protection Agency (EPA) scientists and engineers, representing EPA regional offices, committed to the identification and resolution of issues affecting the characterization and remediation of federal facility Superfund and Resource Conservation and Recovery Act (RCRA) sites. Current forum members are identified in the text. The forum members identified a need to provide Remedial Project Managers (RPMs) and other federal, state, and private personnel working on hazardous waste sites with a technical issue paper that identifies selecting procedures for characterizing soils contaminated with explosive and propellant compounds. Forum members Scott Mangress and Paul Loefered provided technical guidance and direction in the development of this issue paper and other Forum members provided comments.

This paper was prepared by A. B. Crockett, H. D. Craig, T. F. Jenkins, and W. E. Sisk. Support for this project was provided by the EPA National Exposure Research Laboratory's Characterization Research Division with the assistance of the Superfund Project's Technology Support Center for Monitoring and Site Characterization. For further information, contact Ken Brown, Technology Support Center Director, at (703) 798-2270, Alan B. Crockett at (202) 526-1574, or Harry Craig at (503) 326-3659.

It is imperative that any persons working on sites believed to be contaminated with explosive residues thoroughly familiarize themselves with the physical and toxic properties of the materials potentially present and to take all measures as may be prudent and/or prescribed by law to protect life, health, and property. This publication is not intended to include discussions of the safety issues associated with sites contaminated with explosive residues. Examples of safety issues to be considered include but are not limited to, explosion hazards, toxicity of secondary explosives, and/or personal protective equipment. Information pertaining to these concerns can be found in Roberts and Hanley (1992) and Virey (1950). Specifically, this paper is not intended to serve as a guide for sampling and analysis of unexploded ordnance, bulk high explosives, or where secondary explosives concentrations in soil exceed 100,000 mg/kg (10%). These conditions present a potential detonation hazard, and as such, safety procedures and safety precautions should be identified before initiating site characterization activities in these environments. Finally, this paper does not address primary explosives or initiating compounds, such as lead azide, lead styphnate, or mercury fulminate, which are extremely unstable and present a substantial safety risk at any concentration.

<sup>1</sup> Environmental Engineering and Environmental Laboratory, Lockheed Martin B2A Technologies Group<sup>2</sup> US Environmental Protection Agency, Region III<sup>3</sup> US Army Cold Regions Research and Engineering Laboratory<sup>4</sup> US Army Environmental CenterTechnology Support Center for  
Monitoring and Site Characterization,  
National Exposure Research Laboratory  
Characterization Research Division  
Las Vegas, NV 89163-3478Technology Support Office  
Office of Solid Waste and Emergency Response  
U.S. EPA, Washington, D.C.

William W. Kneidel, Jr., H.D. Craig

Prepared as Remedial Paper



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### PURPOSE AND SCOPE

The purpose of this issue paper is to provide guidance to Remedial Project Managers regarding field sampling and on-site analytical methods for detecting and quantifying secondary explosive compounds in soils (Table 1). The paper also includes a brief discussion of EPA Method 8330 (EPA 1995a), the reference analytical method for the determination of 14 explosives and co-contaminants in soil.

This issue paper is divided into the following major sections: (1) background, (2) an overview of sampling and analysis for explosives in soil, (3) data quality objectives, (4) unique sampling design considerations for explosives, (5) a summary of on-site analytical methods, and (6) a summary of the EPA reference analytical method. While some sections may be used independently, joint use of the field sampling and on-site analytical methods sections is recommended to develop a sampling and analytical approach that achieves project objectives.

Many of the explosives listed in Table 1 are not specific target compounds of screening methods, yet they may be detected by one or more screening methods because of their similar chemical structure. Also listed are the explosive and propellant compounds targeted by high performance liquid chromatography (HPLC) methods including EPA SW-846 Method 8330, the standard method required by EPA regions for laboratory confirmation.

### BACKGROUND

Evaluating sites potentially contaminated with explosives is necessary to carry out EPA, U.S. Department of Defense, and U.S. Department of Energy policies on site characterization and remediation under the Superfund, RCRA, Institutional Restoration, Base Closure, and Formerly Used Defense Site environmental programs. Facilities that may be contaminated with explosives include, for example, active and former manufacturing plants, ordnance works, Army ammunition plants, Naval ordnance plants, Army depots, Naval ammunition depots, Army and Naval proving grounds, bombing grounds, artillery impact ranges, explosive ordnance disposal sites, bombing ranges, firing ranges, and ordnance test and evaluation facilities.

Historical disposal practices from manufacturing, spills, ordnance demilitarization, lagged disposal of explosives-contaminated wastewater, and open burn/open detonation (OBOD) of explosive sludges, waste explosives, excess propellants, and unexploded ordnance often result in soil contamination. Common munitions fillers and their associated secondary explosives include Ammonium nitrate (AN), RDX (hexamethylenetriamine nitrate), Cyclotrimethylene trinitrate (CTM), Composition A-1 (RDX), Composition B (TNE/RDX), Composition C-1 (RDX), Explosive D or Yellow D (AP/PA), Octogen (HMX), Deton (HMX/TNT), Percol (PETN/TNT), Picratol (ART/TNT, mixed) (TNT), Tetryl (Tetryl/TNT), and Torpex (RDX/TNT).

Propellant compounds include DNTs and single base (NC), double base (NCNG), and triple base (NCNG/NQ) smokeless powders. In addition, NC is frequently spiked with other compounds (e.g., TNT, DNT, DNB) to increase its explosive properties. AP/PA is used primarily in Naval munitions such as mines, depth charges, and medium to large caliber projectiles. Tetryl is used primarily as a boosting charge, and PETN is used in detonation cord.

A number of munitions facilities have high levels of soil and groundwater contamination, although on-site waste disposal was discontinued 20 to 50 years ago. Under ambient environmental conditions, explosives are highly persistent in soils and groundwater, exhibiting a resistance to naturally occurring volatilization, biodegradation, and hydrolysis. Where biodegradation of TNT occurs, 2-AminoDNT and 4-AminoDNT are the most commonly identified transformation products. Photochemical decomposition of TNT to TNB occurs in the presence of sunlight and water, with TNB being generally resistant to further photodegradation. TNB is subject to biotransformation to 3,5-dinitrobenzoic acid, which has been recommended as an additional target analyte in EPA Method 8330. Picratol is a hydrolysis transformation product of tetryl, and is expected in environmental samples contaminated with tetryl. Site investigations indicate that TNT is the least mobile of the explosives and most frequently occurring soil contaminant problem. RDX and HMX are the most mobile explosives and present the largest groundwater contamination problem. TNB, DNTs, and tetryl are of intermediate mobility and frequently occur as co-contaminants in soil and groundwater. Metals are co-contaminants at facilities where munitions compounds were handled, particularly at OBOD sites. Field analytical procedures for metals, such as x-ray fluorescence, may be useful in screening soils for metals in conjunction with explosives at munitions sites.

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Table 1. Analytical Methods for Commonly Occurring Explosives, Propellants, and Impurities/Degradation Products.

Acronym	Compound Name	Field Method	Laboratory Method
		Cs	N
TNT	2,4,6-trinitrotoluene	Cp, Ip	N
TNB	1,3,5-trinitrobenzene	Cs, Is	N
DNB	1,3-dinitrobenzene	Cs	N
2,4-DNT	2,4-dinitrotoluene	Cp, Cs	N
2,6-DNT	2,6-dinitrotoluene	Cs, Is	N
Tetryl	Methyl-2,4,6-trinitrophenylhydrazine	Cs	N
2AmDNT	2-amino-1,6-dinitrotoluene		N
4AmDNT	4-amino-2,6-dinitrotoluene	Is	N
NT	Nitrotoluene (3 isomers)		N
NB	Nitrobenzene		N
Nitramines		Cs	N
RDX	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Cp, Ip	N
HMX	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazine	Cs	N
NO	Nitrogen dioxide	Cs	G
Nitrate Esters		Cs	
NC	Nitrocellulose	Cs	*L
NG	Nitroglycerin	Cs	*P
PETN	Pentacythritol tetranitrate	Cs	*P
Ammonium Picrate/Picric Acid			
ABFA	Ammonium 2,4,6-trinitrophenoxide/2,4,6-trinitrophenol	Cp, Is	A

Cp = Colorimetric field method, primary target analyte(s).  
Cs = Colorimetric field method, secondary target analyte(s).  
Ip = Immunoassay field method, primary target analyte(s).  
Is = Immunoassay field method, secondary target analyte(s).  
N = EPA SW-846, Nitroaromatics and Nitroamines by HPLC. Method 3350 (EPA 1995).  
P = PETN and NG (Walsh unpublished CREL method).  
Q = Nitroglycerine (Walsh 1989).  
L = Nitrocellulose (Walsh unpublished CREL method).  
A = Ammonium Picrate/Picric Acid (Thorne and Jenkins 1995).

"The performance of a number of field methods have not been assessed utilizing "approved" laboratory methods. It is recommended that verification of the performance of any analytical method be an integral part of a sampling/analysis projects quality assurance program.

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Table 2. Occurrence of Analytes Detected in Soils Contaminated with Explosives.

Compound	% Sample with Analyte Present	Maximum Level ( $\mu\text{g/g}$ )
<b>Nitroaromatics</b>		
TNT	66	102,000
TNB	31	3760
DNB	17	63
2,4-DNT	45	318
2,6-DNT	7	4.5
2-AmDNT	17	373
4-AmDNT	7	11
Tetryl	9	1260
<b>Nitranilines</b>		
RDX	27	15,960
HMX	32	5760
TNT and/or RDX	72	

Derived from Walsh et al. (1993)

The environmental characteristics of munitions components in soil indicate that they are extremely heterogeneous in spatial distribution. Concentrations range from nondetectable to levels ( $> 0.5$  ppm) to percent levels ( $> 10,000$  ppm) for samples collected within several feet of each other. In addition, the waste disposal practices at these sites, such as OPD, exacerbate the problem and may result in conditions ranging from no soil contamination up to solid "clouds" of bulk secondary explosives, such as TNT or RDX. Secondary explosives concentrations above 100 lb ( $> 160,000$  ppm) in soil are also of concern from a potential reactivity standpoint and may affect sample and materials handling processes during remediation. An explosives hazard safety analysis is needed for materials handling equipment to prevent initiating forces that could propagate a detonation throughout the soil mass.

Reliance on laboratory analyses only for site characterization may result in a large percentage of the samples (up to 86% depending upon the site)

with nondetectable levels. The remaining samples may indicate concentrations within a range of four orders of magnitude. Analyzing a small number of samples at an off-site laboratory may result in inadequate site characterization for estimating soil quantities for remediation and may miss potentially reactive material. Laboratory analytical costs vary depending on the turnaround time required. Typical costs for EPA Method 8330 analysis range from \$250 to \$350 per sample for 30-day turnaround, \$500 to \$600 for 7-day turnaround, and approximately \$1,000 per sample for 1-day turnaround, if it is available.

Because of the extremely heterogeneous distribution of explosives in soils, on-site analytical methods are a valuable, cost-effective tool to assess the nature and extent of contamination. Because costs per sample are lower, more samples can be analyzed and the availability of near-real-time results permit redesign of the sampling scheme while in the field. On-site screening also facilitates more effective use of off-site laboratories using more robust analytical methods. Even if only on-site methods are

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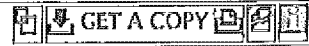
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used to determine the presence or absence of contamination (i.e., all positive samples are sent off-site for laboratory analysis), analytical costs can be reduced considerably. Because on-site methods provide near-real-time feedback, the results of screening can be used to focus additional sampling on areas of known contamination, thus possibly saving additional mobilization and sampling efforts. This approach has been successfully used for a Superfund remedial investigation of an OBOD site (Craig et al. 1993).

During site remediation, such as Superfund remedial actions, data are needed on a near-real-time basis to assess the progress of cleanup. On-site methods can be used during remediation to guide excavation and materials handling activities and to evaluate the need for treatment on incremental quantities of soil (EPA 1992b). Final attainment of soil cleanup levels should be determined by an approved laboratory method, such as EPA Method 8330. This approach was effectively used at a Superfund remedial action for an explosives washout lagoon (Olisek et al. 1994, Markes et al. 1995).

### DATA QUALITY OBJECTIVES

The EPA Data Quality Objectives process is designed to facilitate the planning of environmental data collection activities by specifying the intended use of the data (what decision is to be made), the decision criteria (action level), and the tolerable error rates (EPA 1994, ASTM 1996). Integrated use of on-site and laboratory methods for explosives in soil facilitate achieving such objectives as determining the horizontal and vertical extent of contamination, obtaining data to conduct a risk assessment, identifying candidate wastes for treatability studies, identifying the volume of soil to be remediated, determining whether soil presents a potential detonation hazard (reactive according to RCRA regulations), and determining whether remediation activities have met the cleanup criteria.

Environmental data such as rates of occurrence, average concentrations, and coefficients of variation are typically highly variable for contaminants associated with explosive sites. These differences are a function of site and transport properties, occurrence in different media, and interactions with other chemicals. In addition to use and disposal practices, information on frequency of occurrence and coefficient of variation determines the number of samples required to adequately characterize exposure pathways and is essential in designing sampling plans. Low frequencies of occurrence and high coefficients of variation, such as with explosives,

mean that more samples will be required to characterize the exposure pathways of interest. Sampling variability typically contributes much more to total error than analytical variability (EPA 1990, 1992a). Under these conditions, the major effort should be to reduce sampling variability by taking more samples using less expensive methods (EPA 1992a).

EPA's Guidance for Data Usability in Risk Assessment (EPA 1992a) indicates that on-site methods can produce legally defensible data if appropriate method quality control is available and if documentation is adequate. Field analyses can be used to decrease cost and turnaround time as long as supplemental data are available from an analytical method capable of quantifying multiple explosive analytes (e.g., Method 8330) (EPA 1992a). Significant quality assurance oversight of field analysis is recommended to enable the data to be widely used. The accuracy (correctness of the concentration value and a combination of both systematic error [bias] and random error [precision]) of on-site measurements may not be as high in the field as in fixed laboratories, but the quicker turnaround and the possibility of analyzing a larger number of samples more than compensates for this factor. Remedial project managers, in consultation with chemists and quality assurance personnel, should set accuracy levels for each method and proficiency standards for the on-site analyst.

On-site methods may be useful for analysis of waste treatment residues, such as incineration ash, compost, and bioslurry reactor sludges. However, on-site methods should be evaluated against laboratory methods on a site and matrix-specific basis because of the possibility of matrix interferences. Treatability studies are used to evaluate the potential of different treatment technologies to degrade target and intermediate compounds and to evaluate whether cleanup levels may be achieved for site remediation. Treatability study waste for explosives-contaminated soils should be of higher than average concentration to evaluate the effects of heterogeneous concentrations and for potential toxicity effects for processes such as bioremediation.

During remediation of soils contaminated with explosives, monitoring the rate of degradation and determining when treatment criteria have been met are necessary so that residues below cleanup levels can be disposed of and additional soil treated. Soils contaminated with explosives are currently being treated by incineration, composting, and

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extreme short-range heterogeneity, sampling error overwhelmed analytical error. Contaminant distributions were very site specific, dependent on a number of variables such as waste disposal history, the physical and chemical properties of the specific explosive, and the soil type. The conclusion was that to improve the quality of site characterization data, the major effort should be placed on the use of higher sampling densities and composite sampling strategies to reduce sampling error.

## Heterogeneity Problems and Solutions

The heterogeneous distribution of explosives in soil is often alluded to but seldom quantified. The problem is probably considerably greater for explosive residues in soil than most other organic waste. From available Superfund site data, the median coefficient of variation (CV) (standard deviation divided by the mean) for volatiles, extractables, pesticides/polychlorinated biphenyls (PCBs), and tentatively identified compounds in soils ranges from 0.21 to 2.4% for individual contaminants (EPA 1993b). Data from 10 munitions sites show the median CV for TNT was 284%, and the TNT CV ranged from 127% to 335% for individual sites. Comparable data for RDX are median CV of 137% with a range of 126% to 203%, and the median CVs for 2,4-DNT and APWA were 414% and 184% respectively. If the natural variability of the chemicals of potential concern is large (e.g., CV > 30%), the major planning effort should be to collect more environmental samples (EPA 1993b).

Jenkins et al. (1996a, 1996b) recently conducted a study to quantify the short range sampling variability and analytical error of soils contaminated with explosives. Nine locations, three at each of three different facilities, were sampled. At each location, seven core samples were collected from a circle with a radius of 61 cm, one from the center and six equally spaced around the circumference. The individual samples and a composite sample of the seven samples were analyzed in duplicate, on-site, using the EnSys R15<sup>®</sup> colorimetric soil test kit for TNT (on-site method) and later by Method 8333 at an off-site laboratory. Results showed extreme variation in concentration in five of the nine locations, with the remaining five locations showing more modest variability. For sites with modest variability, only a small fraction of the total error was because of analytical error, i.e. field sampling error dominated total error. For the locations showing

There are several practical approaches to reducing overall error during characterization of soils contaminated with explosives, including increasing the number of samples or sampling density, collecting composite samples, using a stratified sampling design, and reducing within sample heterogeneity. Because explosives have very low volatility, loss of analytes during field preparation of composite samples is not a major concern.

**Increasing the Number of Samples** - One sample way to improve spatial resolution during characterization is by collecting more samples using a finer sampling grid such as a 5-m grid spacing instead of a 10-m spacing. Though desirable, this approach has been rejected in the past because of the higher sampling and analytical laboratory costs. When intensive on-site analytical methods are used, this approach becomes feasible. The slightly lower accuracy associated with on-site methods is more than compensated for by the greater number of samples that can be analyzed and the resultant reduction in total error.

**Collection of Composite Samples** - The collection of composite samples is another very effective means of reducing sampling error. Samples are always taken to make inferences to a larger volume of material, and a set of composite samples from a heterogeneous population provides a more precise estimate of the mean than a comparable number of discrete samples. This occurs because compositing is a "physical process of averaging" (adequate mixing and subsampling of the composite sample are essential to most compositing strategies). Averages of samples have greater precision than the individual samples. Decisions based on a set of composite samples will, for practical purposes, always provide greater statistical confidence than for a comparable set of individual samples. In the study discussed above by Jenkins *et al.* (1996a, 1996b), the composite samples were much more representative of each plot than the individual samples that made up the composites. Using a composite sampling strategy, usually allows the total number of samples

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with RSDs below 1% at two other sites). Subsampling in the field is much more challenging because complete sample processing is not feasible. However, most screening procedures specify relatively small samples, typically a few grams.

To reduce within-sample heterogeneity, two methods can be employed: either homogenization and extraction or analysis of a larger sample. Unless directed otherwise, as an analyst should assume that information representative of the native contents of the sample container is desired. Therefore, the subsample extracted or directly analyzed should be representative of the container. The smaller the volume of that subsample removed for analysis and extraction, the more homogeneous the entire sample should be before subsampling (e.g., a representative 0.5-g subsample is more difficult to obtain than a 20-g subsample from a 250-g sample). Collecting representative 2-g subsamples from 20 g of soil is difficult and can require considerable sample processing such as drying, grinding, and sifting/spitting. Even in the laboratory, as discussed above, obtaining representative subsamples is difficult. An ASTM guide is being developed to help in this regard (Gagner and Crucklett 1996). While sample-mixing procedures such as sieving to disaggregate particles, mixing in plastic bags, etc., can and should be used to prepare a sample, extracting a larger sample is perhaps the easiest method of improving representativeness. For this reason, 20 g of soil is extracted for the Cold Regions Research and Engineering Laboratory (CRREL) method, and the same approach may easily be used to improve results with most of the on-site methods shown in Table 3. The major disadvantage of extracting the larger sample is the larger volume of waste solvent and solvent-contaminated soil that needs disposal.

The effectiveness of proper mixing in the field is illustrated in the recent report by Jenkins et al. (1996a, 1996b). Duplicate laboratory analyses of the same samples, including dry sieving, grinding, mixing, and careful subsampling resulted in an RSD of 11%. Because this field-mixing procedure was so effective in homogenizing the sample, the sampling and subsampling procedure is presented here (Dunkin et al. 1996a). Soil cores (0 to 15 cm in length and 3.6 cm in diameter) were collected into plastic resealable bags, and vegetation was removed. The sample of dry soil, a mixture of sand and gravel, was placed into 23-cm aluminum pie pans; the soil was broken up using gloved hands, and large rocks were

**Reducing Within Sample Heterogeneity** - The heterogeneity of explosives in soils is frequently observed during the use of sensitive analytical methods in which duplicate subsamples are analyzed and differ by more than an order of magnitude. Grant et al. (1993) conducted a fielding time study using field-contaminated soils that were air-dried, ground with a mortar and pestle, sieved, subsampled in triplicate, and analyzed using Method 3330. Even with such sample preparation, the results failed to yield satisfactory precision (the relative standard deviations (RSDs) often exceeded 25% compared

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Table J. Comparative Data for Selecting On-Site Analytical Methods for Explosives in Soil<sup>1</sup>

Method/ Kit	Method Type Analyte and EPA Method No.	Detection Ranges and Range Factor	Type of Results	Sample per Batch	Soil Sample Size	Criteria	
						Sample Preparation & Extraction	Analysis Time - Production Rate (one person)
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Test Kit 01234	Qualitative INI: IDN 244INI INI: IDN 244INI INI: IDN 244INI INI: IDN 244INI	INI: 1 to 25 mg/kg (125X) INI: 1 to 25 mg/kg (125X) INI: 1 to 25 mg/kg (125X) INI: 1 to 25 mg/kg (125X)	Qualitative	Single	10 g	INI: IDN 244INI INI: IDN 244INI INI: IDN 244INI INI: IDN 244INI	INI: IDN 244INI INI: IDN 244INI INI: IDN 244INI INI: IDN 244INI
Test Kit 54321	Qualitative INI: IDN 244INI INI: IDN 244INI INI: IDN 244INI INI: IDN 244INI	INI: 1 to 25 mg/kg (125X) INI: 1 to 25 mg/kg (125X) INI: 1 to 25 mg/kg (125X) INI: 1 to 25 mg/kg (125X)	Qualitative	Single	10 g	INI: IDN 244INI INI: IDN 244INI INI: IDN 244INI INI: IDN 244INI	INI: IDN 244INI INI: IDN 244INI INI: IDN 244INI INI: IDN 244INI
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<sup>1</sup>Topical and field data for EPA 40311

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nium perchlorate. The Green Missile Program is a developmental program to demonstrate the viability of replacing ammonium perchlorate in a large rocket or missile system with an environmentally friendly alternative oxidizer.

NASA recently announced a new paraffin-based solid propellant developed and tested to replace perchlorate-based fuels for spacecraft use (NASA, 2003). In testing since 2001, advertised advantages include nontoxicity, carbon dioxide and water combustion products, increased safety due to high stability, and the ability to be shut down and restarted quickly. However, the applicability of this paraffin-based fuel to meet DOD requirements for solid propellants is unknown.

Within DOD, a backlog of perchlorate-based solid propellant rocket and missiles that have exceeded their perchlorate shelf life are currently in storage.

#### *Missile Recycling*

Within DOD, a backlog of perchlorate-based solid propellant rocket and missiles that have exceeded their perchlorate shelf life are currently in storage. These will eventually require treatment or perhaps recycling of the perchlorate. If not treated or recycled, corrosion of these weapon systems will eventually become a concern.

The Army Aviation and Missile Command's Research Development and Engineering Center has developed and demonstrated a missile recycling capability. In this process, the energetic materials processing module uses supercritical anhydrous ammonia in a closed-loop system to recover high-melting-point explosive (HMX), royal demolition explosive (RDX), and ammonium perchlorate for recycling. In 2003 and 2004, 14,600 tactical optical wire-guided (TOW) missiles were processed in this way. Up to 15,000 missiles are projected for recycling in 2005.

#### *Perchlorate Contamination Associated with Solid Fuel Launch Vehicles*

Perchlorate releases to groundwater associated with the space shuttle and other solid fuel launch vehicles at various locations within the NASA sphere of operations have been documented at the Jet Propulsion Laboratory, Cape Canaveral, and elsewhere. At least one study assessing the potential for perchlorate release from launching operations has been published (Lang et al., 2002).

#### *Munitions*

All of the services within DOD have current and/or past weapon systems that contain perchlorate. These weapons systems contain perchlorate in varying amounts. In a 2001 DOD survey of weapons systems containing perchlorate, 259 different munitions and related items such as fuses, flares, illumination rounds, simulators, grenades, and so on, as well as 41 missile systems in the DOD Munitions Items Disposition Action System (MIDAS) database, were listed. For example, current families of munitions containing perchlorate in use by the Army include the following: training simulators, smokes or obscurants, pyrotechnics, grenades, signals and flares, and fuses. Some types of simulators contain relatively high perchlorate concentrations, as do most of those with solid rocket motors.

The Army, Navy, and Air Force are all looking more thoroughly at historical manufacturing records to develop a timeline for perchlorate-containing munitions to better understand the residues that may be on the various training and testing ranges.

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

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Site InformationCLEANUP STATUS

INACTIVE - ACTION REQUIRED AS OF 11/9/2010

SITE TYPE: FUDSENVIROSTOR ID: 33970009NATIONAL PRIORITIES LIST: NOSITE CODE: 400509ACRES: 1240.58 ACRESSPECIAL PROGRAM:APN: NONE SPECIFIEDFUNDING: \* DEFENSE ENVIRONMENTAL RESTORATION PROGRAM (DERP)CLEANUP OVERSIGHT AGENCIES:

RWQCB 8 - SANTA ANA - LEAD

ASSEMBLY DISTRICT: 60

DTSC - SITE CLEANUP PROGRAM

SENATE DISTRICT: 31ASSOCIATED GEOTRACKER PROJECTSRegulatory ProfilePAST USE(S) THAT CAUSED CONTAMINATION

WAREHOUSING, WASTE - SEWAGE TREATMENT PLANT,  
WASTE - SEWAGE TREATMENT PONDS

POTENTIAL CONTAMINANTS OF CONCERN

EXPLOSIVES (UXO, MEC)

CHLORINE

*Unexpended  
ordnance*

POTENTIAL MEDIA AFFECTED

OTHER GROUNDWATER AFFECTED (USES OTHER THAN  
DRINKING WATER), SOIL.

Site History

In 1942, Camp Anza was a staging area used to train, prepare and supply troops for embarkation to the Far East Theatre of Operations. Camp Anza had hundreds of buildings, numerous underground storage tanks, and a railroad spur. Chemical weapons training took place at Camp Anza utilizing tear and chlorine gases. The Camp encompassed 1,240 acres; originally 59 petroleum fuel oil (heating oil) storage tanks were on the site. Of these only 31 could be located. 27 of the 31 storage tanks were approved for closure. 4 storage tanks were not approved for closure because they were found to contain detectable levels of petroleum contaminants or volatile organic compounds (solvents) in the soil. The 4 storage tanks are on private residential property and stored heating oil for the U.S. Army. The Regional Water Quality Control Board is currently overseeing the tank clean ups. Army Corps may investigate potential for ordnance and chemical warfare materiel contamination. Munitions funding for this site is uncertain.

GEOTRACKER CASES ASSOCIATED WITH THIS ENVIROSTOR PROJECT

<u>GEOTRACKER PROJECT NAME</u>	<u>STATUS</u>	<u>ADDRESS</u>	<u>CITY</u>
Camp Anza - US ARMY CAMP ANZA UST B18	Completed - Case Closed	CYPRESS AVE	RIVERSIDE
Camp Anza - US ARMY CAMP ANZA UST B2 & B3 (J09CA0267)	Open - Remediation	RUTLAND AVE	RIVERSIDE
Camp Anza - US ARMY CAMP ANZA UST B5	Completed - Case Closed	CYPRESS AVE	RIVERSIDE
Camp Anza - US ARMY CAMP ANZA UST C12	Completed - Case Closed	JANET AVE	RIVERSIDE

<u>Camp Anza - US ARMY CAMP ANZA UST C12A and C12B</u>	Completed - Case Closed	JANET AVE	RIVERSIDE
<u>Camp Anza - US ARMY CAMP ANZA UST C18</u>	Completed - Case Closed	TREY	RIVERSIDE
<u>Camp Anza - US ARMY CAMP ANZA UST C2 &amp; C3</u>	Completed - Case Closed	JANET AVE	RIVERSIDE
<u>Camp Anza - US ARMY CAMP ANZA UST C2-A</u>	Completed - Case Closed	CHAPEL ST	RIVERSIDE
<u>Camp Anza - US ARMY CAMP ANZA UST C20 &amp; C21</u>	Completed - Case Closed	PICKER ST	RIVERSIDE
<u>Camp Anza - US ARMY CAMP ANZA UST C6 &amp; C7</u>	Completed - Case Closed	JANET AVE	RIVERSIDE
<u>PRIVATE RESIDENCE</u>	Completed - Case Closed	JANET AVE	RIVERSIDE
<u>PRIVATE RESIDENCE</u>	Open - Remediation	CYPRESS AVE	RIVERSIDE

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PRP closed out 2005  
1999

As of Sept. 30, 2013

## LEGEND:

## Category:

BD/DR = Building Demolition and Debris Removal

CON/HTRW = Contaminated Hazardous, Toxic or Radioactive Waste

HTRW = Hazardous, Toxic and Radioactive Waste

MMRP = Military Munitions Response Program

MMRP/CMM = Military Munitions Response Program / Chemical Warfare Materials

PRP/HTRW = Potentially Responsible Party Actions / Hazardous, Toxic or Radioactive Waste

PRP/MMRP = Potentially Responsible Party Actions / Military Munitions Response Program

## USACE Division

LRD = Great Lakes and Ohio River Division

NAD = North Atlantic Division

NWD = Northwestern Division

POD = Pacific Ocean Division

SAD = South Atlantic Division

SPD = South Pacific Division

SWD = Southwestern Division

State	City	County	Property Name	Site	FUDS Property Number	Category	USACE Division
CA	CAMARILLO	Ventura County	CAMARILLO AIRPT	06	J09CA0126	MMRP	SPD
CA	CAMARILLO	Ventura County	CAMARILLO AIRPT	07	J09CA0126	MMRP	SPD
CA	CAMARILLO	Ventura County	CAMARILLO AIRPT	08	J09CA0126	PRP/MMRP	SPD
CA	HARMONY	San Luis Obispo County	CAMBRIA AIR FORCE STATION	01	J09CA0266	CON/HTRW	SPD
CA	RIVERSIDE	Riverside County	CAMP ANZA	01	J09CA0267	CON/HTRW	SPD
CA	RIVERSIDE	Riverside County	CAMP ANZA	02	J09CA0267	PRP/HTRW	SPD
CA	BERKELEY	Alameda County	Camp Ashby	01	J09CA0765	HTRW	SPD
CA	NO CITY	Nevada County	Camp Beale	01	J09CA0136	MMRP	SPD
CA	NO CITY	Nevada County	Camp Beale	03	J09CA0136	HTRW	SPD
CA	AVAILON	Los Angeles County	CAMP CACTUS	01	J09CA0271	CON/HTRW	SPD
CA	NO CITY	San Diego County	CAMP CALLAN	01	J09CA0272	PRP/HTRW	SPD
CA	NO CITY	San Diego County	CAMP CALLAN	02	J09CA0272	HTRW	SPD
CA	LOMPOC	San Diego County	CAMP CALLAN	03	J09CA0272	MMRP	SPD
CA	DESERT CENTER	Santa Barbara County	CAMP COOKE	01	J09CA0273	MMRP	SPD
CA	NO CITY	Riverside County	CAMP COXCOMB	01	J09CA0274	MMRP	SPD
CA	NO CITY	Imperial County	CAMP DUNLAP	01	J09CA0059	CON/HTRW	SPD
CA	SAN DIEGO	San Diego County	CAMP ELLIOT	01	J09CA0067	MMRP	SPD
CA	SAN DIEGO	San Diego County	CAMP ELLIOT	02	J09CA0067	MMRP	SPD
CA	SAN DIEGO	San Diego County	CAMP ELLIOT	03	J09CA0067	MMRP	SPD
CA	ESSEX	San Diego County	CAMP ELLIOT	04	J09CA0067	MMRP	SPD
CA	ESSEX	San Bernardino County	CAMP ESSEX	01	J09CA0278	MMRP	SPD
CA	ESSEX	San Bernardino County	CAMP ESSEX	02	J09CA0278	MMRP	SPD
CA	ESSEX	San Bernardino County	CAMP ESSEX	03	J09CA0278	MMRP	SPD
CA	ESSEX	San Bernardino County	CAMP ESSEX	04	J09CA0278	MMRP	SPD
CA	AUBURN	Placer County	CAMP ESSEX	05	J09CA0278	MMRP	SPD
CA	NO CITY	Riverside County	Camp Flint	01	J09CA0768	HTRW	SPD
CA	RIVERSIDE	Riverside County	CAMP GRANITE	01	J09CA7043	MMRP	SPD
CA	RIVERSIDE	Riverside County	CAMP HAAN	00	J09CA0279	MMRP	SPD
CA	NEEDLES	San Bernardino County	CAMP HAAN	01	J09CA0279	HTRW	SPD
CA	NEEDLES	San Bernardino County	CAMP IBIS (CAMIA)	01	J09CA0283	MMRP	SPD

US Army Corps  
of Engineers<http://www.usace.army.mil/><http://www.fuds.mil/>

#2

**FREY ENVIRONMENTAL, INC.**

Environmental Geologists, Engineers, Assessors

2817 A Lafayette Avenue  
Newport Beach, CA 92663  
(949) 723-1645  
Fax (949) 723-1854

October 11, 2005  
485-01

Bob Beers  
fax (951) 360-2080  
17 pages

To: Sikhwan Foster @ (951) 826-2046

Re: Agricultural Park  
Riverside, California

Attached is are the text, table and figures from the groundwater monitoring well installation and sampling event.

Please call with any questions.

Sincerely,  
FREY Environmental, Inc.

  
Evan Privett

Senior Project Geologist

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# ***FREY ENVIRONMENTAL, INC.***

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October 11, 2008  
485-01

Bob Beers  
fax (951) 360-2080  
17 pages

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Sincerely,  
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Evan Prvett

Senior Project Geologist

20

# **FREY ENVIRONMENTAL, INC.**

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October 11, 2005  
485-01

Maryam Tasnif-Abbasi  
Department of Toxic Substance Control  
5796 Corporate Avenue  
Cypress, CA 90630

Re: Soil and Groundwater Sample Collection  
Agricultural Park  
7020 Crest Avenue  
Riverside, California

Dear Ms. Tasnif-Abbasi:

This letter documents the installation and sampling of four groundwater monitoring wells at the Agricultural Park in Riverside, California (Site - Figure 1).

## **Groundwater Monitoring Well Installation and Sampling Workplan and Approval**

FREY Environmental, Inc. (FREY) submitted an abbreviated groundwater monitoring well installation and sampling workplan dated August 16, 2005. The Department of Toxic Substance Control approved the workplan in a letter dated September 6, 2005.

## **Groundwater Monitoring Well Installation**

Groundwater monitoring wells MW6, MW7, MW8 and MW9 were installed at the Site in the locations shown on Figure 2 on September 10, 2005. Soil samples were collected at depths of 5, 10, 15 and 20 feet below the ground surface (bgs) from wells MW6, MW7, MW8 and MW9. Soil samples were collected in 2-inch diameter brass or stainless steel tubes which lined a California split spoon sampler. Soil sample collection details have been further discussed in Appendix A.

Borings were completed at depths ranging from 20 to 25 feet bgs. Groundwater monitoring wells MW6 through MW9 were constructed of 4-inch diameter schedule 40 pvc blank casing and screen. Wells MW6 through MW9 were constructed of 10 feet of 0.010 slotted casing placed in the bottom of each boring. Boring logs detailing subsurface soil conditions and groundwater monitoring well construction details have been attached in Appendix B.

### **Groundwater Monitoring Well Development**

Groundwater monitoring wells GMW-1, GMW-2, GMW-4, GMW-5 and MW6 through MW9 were developed by surging and pumping on September 13, 2005. Approximately 50 gallons of groundwater was pumped from wells GMW-1, GMW-2, GMW-4 and GMW-5. Turbidity measurements at the termination of pumping from wells GMW-1, GMW-2, GMW-4 and GMW-5 ranged from 20 nephelometric units (NTUs) to 198 NTUs (GMW-1). Between 12 and 18 gallons of groundwater was pumped from wells MW6 through MW9. Turbidity measurements at the termination of pumping from wells MW6 through MW9 ranged from 78 NTUs to 200 NTUs.

### **Groundwater Monitoring Well Sampling**

On September 17, 2005, groundwater monitoring wells GMW-1, GMW-2, GMW-4, GMW-5 and MW6 through MW9 were measured for depth to water. Depth to water measurements ranged from 10.88 feet below top of casing (GMW-1) to 29.56 feet below top of casing (GMW-5).

Three volumes of groundwater were purged prior to the collection of groundwater samples from each well. The purge rate for each well was set at 0.5 gallons per minute. The collection order for groundwater analytes was from first to last: VOCs, TPH-gasoline, TPH-diesel, PAHs, SVOCs, metals, PCBs and dioxins and furans. Groundwater monitoring wells were sampled in the following order GMW-1, GMW-2, GMW-4, GMW-5, MW9, MW8, MW7 and MW6.

Turbidity values measured during groundwater sampling activities ranged from 2.92 NTUs (GMW-1) to 19.8 NTUs (MW7).

### **Laboratory Analyses of Soil and Groundwater Samples**

Soil and groundwater samples were analyzed for the following analytes in accordance with the listed methods:

- TPH-gasoline by EPA Method No. 8015M
- TPH-diesel by EPA Method No. 8015M
- PCBs by EPA Method No. 8082
- PAHs by EPA Method No. 8270C-SIM
- SVOCs by EPA Method No. 8270C
- Title 22 metals by EPA Method Nos. 6010B/7471A

Soil samples collected from depths of 15 and 20 feet bgs were not analyzed for SVOCs or PAHs.

Groundwater samples collected from wells GMW-2 and GMW-4 were analyzed only for VOCs by EPA Method No. 8260B. Groundwater samples were not analyzed for SVOCs as discussed below.



In addition to the analyses specified above, groundwater samples collected from wells GMW-1, GMW-5 and MW6 through MW9 were also analyzed for:

- Dioxins by EPA Method No. 1613
- Perchlorate by EPA Method No. 314.0
- VOCs by EPA Method No. 8260B

Soil and groundwater sample results have been summarized in Tables 1 through 5.

Variations from the workplan are described as follows:

- Groundwater monitoring well MW6 was installed approximately 200 feet south of the location proposed in the workplan. An attempt to install MW6 in the location proposed in the workplan resulted in refusal at a depth of 23 feet bgs. No groundwater was observed to enter the borehole after a stand by time of 30 minutes. In addition, no water was noted in the gullies located immediately to the north and to the west. A second attempt to install MW6 approximately 100 feet south of the second location resulted in drill rig refusal at a depth of 24 feet bgs. No groundwater was observed to enter the borehole after a standby time of 30 minutes. Groundwater monitoring well MW6 was installed near previously excavated trench pit TP32.
- Soil samples collected from depths of 5 and 10 feet were analyzed for SVOCs but outside of the 14 day holding time. Although the chain of custody was marked for SVOC analyses, the test was not conducted until requested by FREY after the 14 day holding time. It is unlikely this will effect the outcome of this investigation as SVOCs (with the exception of two PAHs) were not detected in 45 soil samples collected during previous investigations and analyzed for SVOCs.
- Groundwater samples were not analyzed for SVOCs. Prior to the groundwater sample collection date, FREY sent a list of analytes to the laboratory and requested they supply containers adequate for sample collection and analyses. The sample collection containers arrived the day before sampling was scheduled to occur. During field sampling activities, the professional geologist conducting the groundwater sampling phoned the laboratory and discussed the container inventory in conjunction with the proposed analyte list. The chemist assured him that the containers on hand were sufficient for the proposed analyte analyses. However, after receipt of sample results FREY was informed that sufficient water for SVOC analyses was not provided.

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## BRIEF DISCUSSION OF FIELD AND LABORATORY RESULTS

### Soil Sample Data

- PCBs were detected in soil samples collected from a depth of 20 feet bgs in MW6 (MW6-20) and in soil samples MW7-15, MW7-20, MW8-15 and MW9-5. PCBs were not detected in any other soil samples analyzed as part of this investigation.
- PAHs, phenanthrene and chrysene were detected in concentrations of 0.037 mg/kg and 0.022 mg/kg, respectively, in soil sample MW8-5. The chrysene concentration detected in MW8-5 was far below the residential PRG for chrysene of 62 mg/kg. The EPA does not publish a PRG for phenanthrene. No other PAHs were detected in soil samples analyzed as part of this investigation.
- SVOCs were not detected in any soil samples analyzed as part of this investigation.
- Metals were not detected in excess of respective residential preliminary remediation goals for any of the soil samples submitted for analyses. Of particular interest is that well MW9 was drilled in a location approximately 4 feet south of formerly sampled test pit TP29. The soil sample collected from a depth of 0.5 feet bgs from TP29 contained chromium in excess of the residential PRG. Soil samples collected from MW9 did not contain concentrations of chromium in excess of 21.4 mg/kg, well below the residential PRG of 210 mg/kg.
- TPH-gas was not detected in soil samples submitted for EPA 8015M analyses. TPH-diesel was detected in soil samples MW7-15 (460 mg/kg), MW7-20 (310 mg/kg) and MW8-5 (13 mg/kg). TPH-diesel was not detected in other soil samples analyzed as part of this investigation.

### Groundwater Sample Data

- Groundwater samples collected from wells MW6 through MW9 contained PCBs at concentrations ranging from 1.0 ug/L (MW8) to 19 ug/L (MW6). PCBs were not detected in groundwater samples collected from wells GMW-1 or GMW-5. The concentrations of PCBs detected in water samples collected from MW6 through MW9 may be the result of suspended solids present in the water samples as opposed to dissolved phase PCBs in groundwater.
- Perchlorate was detected in groundwater samples collected from wells GMW-1, GMW-5, MW6, MW7 and MW9 at concentrations ranging from 6.4 ug/L to 14 ug/L. The greatest concentration of perchlorate was detected in well GMW-1. GMW-1 is located near the southern property line and is located up-gradient from the former sewer treatment plant. Perchlorate was not detected in the groundwater sample collected from well MW8.
- VOCs, TPH-gas and TPH-diesel were not detected in groundwater samples collected as part of this investigation.

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- Groundwater samples collected from wells GMW-1, GMW-5 and MW6 through MW9 did not contain concentrations of Title 22 metals in excess of respective MCLs or action levels with the exception of total lead and thallium. Total lead was detected at concentrations of 36.0 ug/L and 41.6 ug/L in groundwater samples collected from wells MW8 and MW9, respectively. The action level for lead in groundwater is 15 ug/L. Thallium was detected at a concentration of 23.3 ug/L in the groundwater sample collected from MW6. The MCL for thallium is 2 ug/L.
- Low concentrations of dioxins and furans were detected in groundwater samples collected from wells MW6 and MW7. The toxic equivalency for the groundwater samples collected from MW6 and MW7 were calculated to be 1.42 picograms per liter (pg/L) and 1.06 pg/L, respectively. The MCL for dioxins is 30 pg/L. More specifically, the MCL for dioxins is listed for 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). Concentrations of 2,3,7,8-TCDD were not detected in any of the water samples analyzed as part of this investigation.

#### Direction of Groundwater Flow

- Groundwater was estimated to flow toward the north at an estimated gradient of 0.023 feet per foot on September 17, 2005.

Please contact the undersigned with any questions at (949) 723-1645.

Sincerely,  
FREY Environmental, Inc.

Joe Frey  
Principal Geologist  
CEG #1500

Evan Privett  
Senior Project Geologist  
PG#7880

#### Attachments

- Table 1 - Chemical Analyses of Soil Samples-Total Petroleum Hydrocarbons, Polychlorinated Biphenyls, and Polynuclear Aromatic Compounds
- Table 2 - Chemical Analyses of Soil Samples-Title 22 Metals
- Table 3 - Chemical Analyses of Groundwater Samples-Polychlorinated Biphenyls
- Table 4 - Chemical Analyses of Groundwater Samples-Petroleum Hydrocarbons, Volatile Organic Compounds, Perchlorate
- Table 5 - Chemical Analyses of Groundwater Samples-Title 22 Metals
- Figure 1 - Site Location Map
- Figure 2 - Site Sketch Showing Groundwater Monitoring Well Locations
- Figure 3 - Site Sketch Showing Groundwater Elevations and Estimated Direction of Groundwater Flow on September 17, 2005

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Appendix A - Soil Sample Procedures  
Appendix B - Boring Logs  
Appendix C - Laboratory Reports-Soil Samples  
Appendix D - Laboratory Reports-Groundwater Samples

cc: Chuck Cox  
Friends of the Riverside Airport LLC  
8175 Limonite Avenue  
Riverside, CA 92509

Jon Wactor  
Wactor & Wick LLP  
180 Grand Avenue, Suite 950  
Oakland, CA 94612

**TABLES**

TABLE 1

**CHEMICAL ANALYSES OF SOIL SAMPLES**  
**TOTAL PETROLEUM HYDROCARBONS**  
**POLYCHLORINATED BIPHENYLS**  
**POLYNUCLEAR AROMATIC COMPOUNDS**

AGRICULTURAL PARK  
 7926 CREST AVENUE  
 RIVERSIDE, CALIFORNIA  
 (soil - milligrams per Micogram)

Well Number	Depth (feet bgs)	Date Sampled	TPH-gal (1)	TPH-diesel (1)	PCBs - Aroclors (2)								PAHs (3)	
					1016	1221	1232	1242	1248	1254	1260	1262	Phenanthrene	Chrysene
MW6	5	09/10/2005	ND<0.50	ND<5.0	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.020	ND<0.020
	10	09/10/2005	ND<0.50	ND<5.0	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.020	ND<0.020
	15	09/10/2005	ND<0.50	ND<5.0	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	NA	NA
	20	09/10/2005	ND<0.50	ND<5.0	ND<0.050	ND<0.050	ND<0.050	ND<0.050	0.170	ND<0.050	ND<0.050	ND<0.050	NA	NA
MW7	5	09/10/2005	ND<0.50	ND<5.0	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.020	ND<0.020
	10	09/10/2005	ND<0.50	ND<5.0	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.020	ND<0.020
	15	09/10/2005	ND<0.50	460	ND<0.050	ND<0.050	ND<0.050	ND<0.050	330	ND<0.050	ND<0.050	ND<0.050	NA	NA
	20	09/10/2005	ND<0.50	310	ND<0.050	ND<0.050	ND<0.050	ND<0.050	0.130	ND<0.050	ND<0.050	ND<0.050	NA	NA
MW8	5	09/10/2005	ND<0.50	13	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	0.037	0.022
	10	09/10/2005	ND<0.50	ND<5.0	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.020	ND<0.020
	15	09/10/2005	ND<0.50	ND<5.0	ND<0.250	ND<0.250	ND<0.250	ND<0.250	1.500	ND<0.250	ND<0.250	ND<0.250	NA	NA
	20	09/10/2005	ND<0.50	ND<5.0	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	NA	NA
MW9	5	09/10/2005	ND<0.50	ND<5.0	ND<0.050	ND<0.050	ND<0.050	ND<0.050	0.500	ND<0.050	ND<0.050	ND<0.050	ND<0.020	ND<0.020
	10	09/10/2005	ND<0.50	ND<5.0	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.020	ND<0.020
	15	09/10/2005	ND<0.50	ND<5.0	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	NA	NA
	20	09/10/2005	ND<0.50	ND<5.0	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	NA	NA
EPA PRG Residential Soils					0.350	0.350	0.220	0.220	0.220	0.220	0.220	0.220	62	

Notes:

- 1 TPH-gal and TPH-diesel analyzed in accordance with EPA Method No. 8015M.
- 2 PCBs (polychlorinated biphenyls) analyzed in general accordance with EPA Method No. 8082.
- 3 PAHs (Polynuclear aromatic hydrocarbons) analyzed in accordance with EPA Method No. 8270C-SIM. Only detected analytes are listed.
- 4 ND - Compound not detected above the concentration shown.

TABLE 2

CHEMICAL ANALYSES OF SOIL SAMPLES  
TITLE 22 METALS

AGRICULTURAL PARK  
7020 CHEST AVENUE  
RIVERSIDE, CALIFORNIA  
(soil - 600 grams per 100 grams)

Drilling Number	Depth (feet)	Date Sampled	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
MW6	5	09/10/2005	ND<0.750	ND<0.75	413	ND<0.250	ND<0.500	11.7	17.3	33.8	ND<0.500	ND<0.0035	ND<0.250	5.36	ND<0.750	ND<0.250	ND<0.750	47.6	53.3
	10	09/10/2005	ND<0.750	ND<0.75	266	ND<0.250	ND<0.500	13.6	15.0	20.5	ND<0.500	ND<0.0035	ND<0.250	4.38	ND<0.750	ND<0.250	ND<0.750	38.6	44.1
	15	09/10/2005	ND<0.750	ND<0.75	476	ND<0.250	ND<0.500	21.9	22.4	31.1	ND<0.500	ND<0.0035	ND<0.250	6.26	ND<0.750	ND<0.250	ND<0.750	50.1	63.7
	20	09/10/2005	ND<0.750	ND<0.75	347	ND<0.250	ND<0.500	16.2	16.5	25.0	ND<0.500	ND<0.0035	ND<0.250	5.52	ND<0.750	ND<0.250	ND<0.750	40.6	50.3
MW7	5	09/10/2005	ND<0.750	4.28	113	0.608	ND<0.500	22.1	12.5	10.7	4.47	ND<0.0035	ND<0.250	11.1	ND<0.750	ND<0.250	ND<0.750	43.9	37.3
	10	09/10/2005	ND<0.750	0.776	254	ND<0.250	ND<0.500	14.6	19.5	2.64	ND<0.500	ND<0.0035	ND<0.250	5.94	ND<0.750	ND<0.250	ND<0.750	42.9	51.1
	15	09/10/2005	ND<0.750	ND<0.75	325	ND<0.250	ND<0.500	14.5	15.1	1.61	ND<0.500	ND<0.0035	ND<0.250	5.02	ND<0.750	ND<0.250	ND<0.750	46.6	51.2
	20	09/10/2005	ND<0.750	3.64	160	0.325	4.32	11.5	10.0	31.3	52.9	0.418	2.80	16.1	ND<0.750	5.93	ND<0.750	43.3	177
MW8	5	09/10/2005	ND<0.750	ND<0.750	57.1	ND<0.250	ND<0.500	4.27	3.65	3.40	ND<0.500	ND<0.0035	ND<0.250	2.05	ND<0.750	ND<0.250	ND<0.750	11.1	14.6
	10	09/10/2005	ND<0.750	ND<0.75	105	ND<0.250	ND<0.500	7.33	6.89	2.90	ND<0.500	ND<0.0035	ND<0.250	2.34	ND<0.750	ND<0.250	ND<0.750	21.9	27.9
	15	09/10/2005	ND<0.750	1.24	210	0.256	ND<0.500	19.8	12.6	11.3	3.83	ND<0.0035	ND<0.250	8.34	ND<0.750	ND<0.250	ND<0.750	36.7	52.2
	20	09/10/2005	ND<0.750	ND<0.75	257	ND<0.250	ND<0.500	13.7	13.8	5.36	ND<0.500	ND<0.0035	ND<0.250	4.34	ND<0.750	ND<0.250	ND<0.750	41.3	50.9
MW9	5	09/10/2005	ND<0.750	1.38	165	0.340	ND<0.500	11.5	3.31	9.46	0.533	ND<0.0035	ND<0.250	7.77	1.50	ND<0.250	ND<0.250	21.3	23.2
	10	09/10/2005	ND<0.750	ND<0.750	324	ND<0.250	ND<0.500	10.0	6.70	6.22	0.533	ND<0.0035	ND<0.250	2.58	ND<0.750	ND<0.250	ND<0.750	21.5	26.9
	15	09/10/2005	ND<0.750	1.23	210	ND<0.250	ND<0.500	13.6	7.33	5.78	1.10	ND<0.0035	ND<0.250	3.84	ND<0.750	ND<0.250	ND<0.750	30.3	30.2
	20	09/10/2005	ND<0.750	ND<0.750	765	ND<0.250	ND<0.500	21.4	11.5	2.60	1.46	ND<0.0035	ND<0.250	4.56	ND<0.750	ND<0.250	ND<0.750	45.6	56.0
EPA PRG Residential Soils			34	0.0020.39	5.403	150	37	210	900	3,100	150	23	390	1,000	390	390	5.2	75	23,000

Notes:

1 Soil samples analyzed in accordance with EPA Method Nos. 8210B or 8211A.

2 ND = Not detected

TABLE 3

**CHEMICAL ANALYSES OF GROUNDWATER SAMPLES  
POLYCHLORINATED BIPHENYLS**

AGRICULTURE PARK  
7020 CREST AVENUE  
RIVERSIDE, CALIFORNIA  
(water - micrograms per liter)

Well No.	Date Sampled	PCBs - Aroclors						
		1016	1221	1242	1248	1254	1260	1262
GMW-1	09/17/2005	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
GMW-5	09/17/2005	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
MW6	09/17/2005	ND<1.0	ND<1.0	ND<1.0	19	ND<1.0	ND<1.0	ND<1.0
MW7	09/17/2005	ND<1.0	ND<1.0	ND<1.0	8.7	ND<1.0	ND<1.0	ND<1.0
MW8	09/17/2005	ND<1.0	ND<1.0	ND<1.0	1.0	ND<1.0	ND<1.0	ND<1.0
MW9	09/17/2005	ND<1.0	ND<1.0	ND<1.0	11	ND<1.0	ND<1.0	ND<1.0
MCI's		0.5	0.5	0.5	0.5	0.5	0.5	0.5

## Notes:

[1] PCBs analyzed in accordance with EPA Method No. 8082.

[2] ND = Analyte not detected above the detection limit.



TABLE 4

CHEMICAL ANALYSES OF GROUNDWATER SAMPLES  
PETROLEUM HYDROCARBONS  
VOLATILE ORGANIC COMPOUNDS  
PERCHLORATE

AGRICULTURE PARK  
7020 CREST AVENUE  
RIVERSIDE, CALIFORNIA  
(water - micrograms per liter)

Well No.	Well Elevation (ft-msl) [1]	Screen Interval (feet-bgs)	Date Sampled	Depth to Groundwater (feet-bgs) [2]	Groundwater Elevation (ft-msl)	TPH-gas [3]	TPH-diesel [3]	VOCs [4]	Perchlorate [5]
GMW-1	745.56	11-21	09/17/2005	10.86	734.68	ND<100	ND<500	ND	14
GMW-2	734.14	20.5-30.5	09/17/2005	13.85	720.29	NA	NA	ND	NA
GMW-4	740.28	30-40	09/17/2005	24.92	715.36	NA	NA	ND	NA
GMW-5	739.63	32.5-42.5	09/17/2005	29.56	710.07	ND<100	ND<500	ND	7.4
MW6	728.79	15-25	09/17/2005	20.25	708.54	ND<100	ND<500	ND	6.4
MW7	735.64	10-20	09/17/2005	18.30	717.34	ND<100	ND<500	ND	8.1
MW8	733.11	13-23	09/17/2005	17.14	715.97	ND<100	ND<500	ND	ND<2.0
MW9	731.41	15-25	09/17/2005	21.59	709.82	ND<100	ND<500	ND	8.4
Public Health Goal									6

## Notes:

- [1] Wells were surveyed for elevation by a California Registered Land Surveyor on September 16, 2005  
 [2] Depth to groundwater as measured from the top of well casing.  
 [3] TPH-gas and TPH-diesel analyzed in accordance with EPA Method No. 8015M.  
 [4] VOCs analyzed in accordance with EPA Method No. 8260B. Reporting limits varied from 0.50 ug/L to 10 ug/L.  
 [5] Perchlorate analyzed in general accordance with EPA Method No. 314.0.  
 ND = Not detected above the laboratory detection limit.  
 NA = Not analyzed  
 ft-msl - Feet above mean sea level.

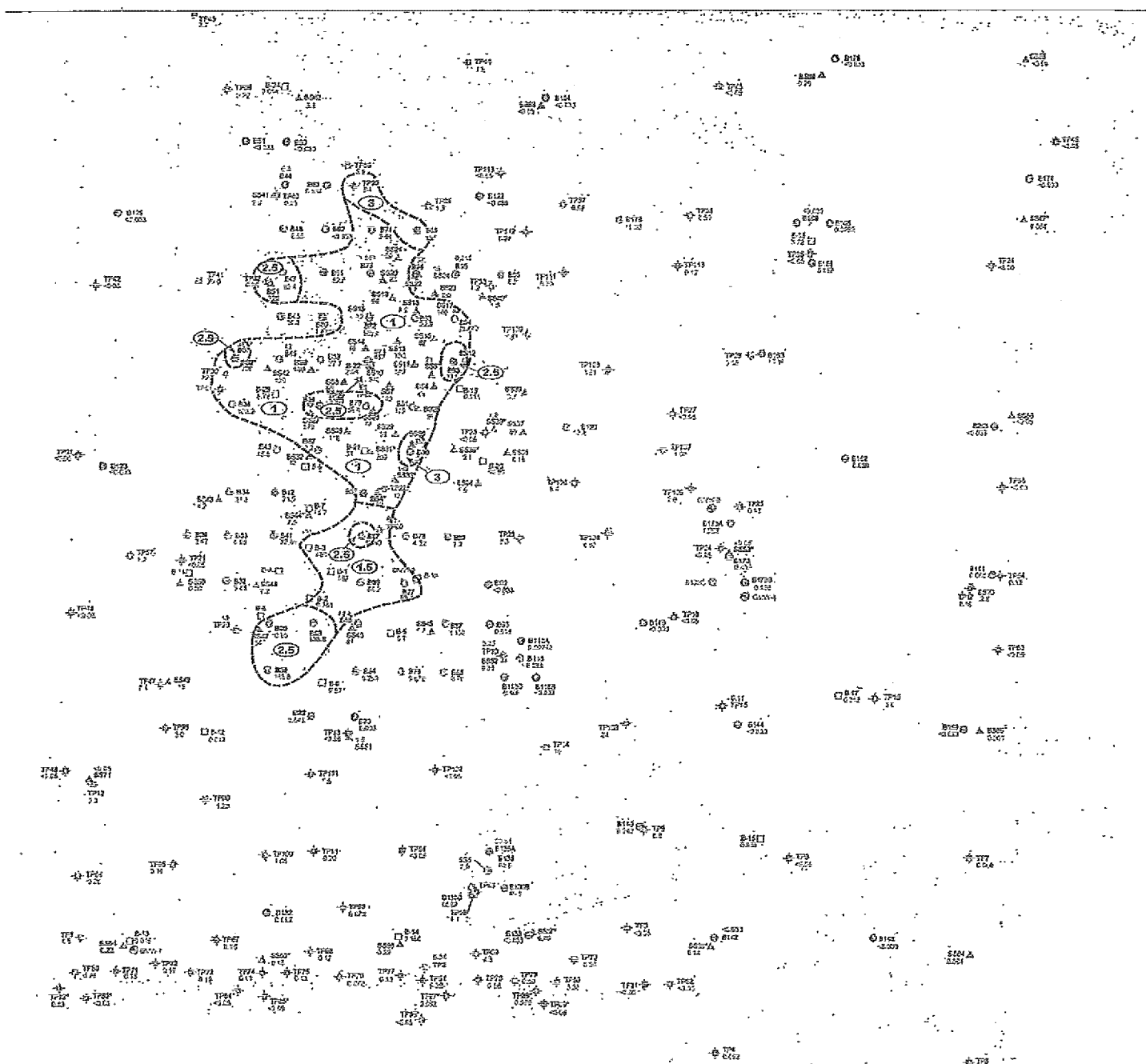
TABLE 5  
CHEMICAL ANALYSES OF GROUNDWATER SAMPLES  
TITLE 22 METALS

AGRICULTURAL PARK  
7020 CREST AVENUE  
RIVERSIDE, CALIFORNIA  
(values - micrograms per liter)

Well Number	Date Sampled	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Total Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
CMW-1	06/17/2005	ND<15.0	ND<10.0	97.7	ND<1.00	ND<3.00	ND<5.00	ND<3.00	8.79	ND<1.0	ND<0.500	ND<5.00	ND<5.00	ND<15.0	ND<5.00	ND<15.0	22.0	11.3
CMW-5	09/17/2005	ND<15.0	ND<10.0	61.0	ND<1.00	ND<5.00	ND<5.00	ND<5.00	2.38	ND<1.0	ND<0.500	11.5	ND<5.00	ND<15.0	ND<5.00	ND<15.0	31.8	ND<10.0
MMW6	09/17/2005	ND<15.0	ND<10.0	213	ND<1.00	ND<5.00	10.8	8.90	9.43	ND<1.0	ND<0.500	11.0	ND<5.00	ND<15.0	ND<5.00	23.3	33.4	41.7
MMW7	09/17/2005	ND<15.0	ND<10.0	24.9	ND<1.00	ND<5.00	ND<5.00	ND<5.00	11.7	ND<1.0	ND<0.500	11.3	ND<5.00	ND<15.0	ND<5.00	ND<15.0	13.2	27.4
MMW8	09/17/2005	ND<15.0	ND<10.0	60.9	ND<1.00	ND<5.00	ND<5.00	ND<5.00	16.3	36.0	ND<0.500	3.61	ND<5.00	ND<15.0	ND<5.00	ND<15.0	14.2	35.7
MMW9	09/17/2005	ND<15.0	ND<10.0	194	ND<1.00	ND<5.00	3.20	ND<5.00	22.1	41.6	ND<0.500	32.3	ND<5.00	ND<15.0	ND<5.00	ND<15.0	24.7	33.0
MCLs		6	50	1,000	4	5	50		1,000	15	2		100	50	100	2		5,000
Secondary MCLs																		
Action Levels																		

Notes:  
[1] Metals were analyzed in accordance with EPA Method No. 6010B or EPA 7470A.  
[2] ND = Analyte not detected above the method detection limit.





# **EXPLANATION**

- 10-1 [ ] SOIL BORING LOCATION (EARTHSAFE)
- 10-2 [ ] SOIL BORING LOCATION (FREY)
- 10-3 [ ] SURFACE SOIL SAMPLE LOCATION (GEOMATRIX)
- 10-4 [ ] TEST PIT LOCATION (GEOMATRIX)
- 10-5 [ ] GROUNDWATER MONITORING WELL LOCATION
- 10-6 [ ] TOTAL POLYCHLORINATED BIPHENYL (PCB) CONCENTRATIONS REPORTED EQUAL OR LESS THAN 0.22 MILLIGRAMS PER KILOGRAM (mg/kg)
- 10-7 [ ] PROPOSED EXCAVATION LIMITS
- 10-8 [ ] PROPOSED DEPTH OF EXCAVATION
- 10-9 [ ] PCB CONCENTRATIONS IN SOIL SURFACE TO 0.75 FEET BGS
- 10-10 [ ] NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMIT AS SHOWN
- 10-11 [ ] LOCATION APPROXIMATE; NOT SURVEYED

## **NOTES:**

1. All locations are approximate.
2. Soil samples collected from surface to 0.75 feet below ground surface.
3. Soil samples were collected by Earthsafe in December 2003; Soil samples were collected by FREY in August 2003; Soil samples were collected by Geomatrix in March and April 2004; Test pit samples were collected by Geomatrix in July through October 2004.
4. Survey data are relative to Mean Sea Level, and are based upon the City of Riverside Bench Mark UP 618. This Bench Mark has an elevation of 525.92 (based upon a 1983 adjustment), and is referenced to the National Geodetic Vertical Datum (NGVD) of 1923. The Horizontal Datum for this Bench Mark is the North American Datum of 1983, California State Plane Coordinate System, Zone 6.
5. Geomatrix note about reference.



Client: FRIENDS OF THE RIVERSIDE AIRPORT, LLC

Project No.: 458-01

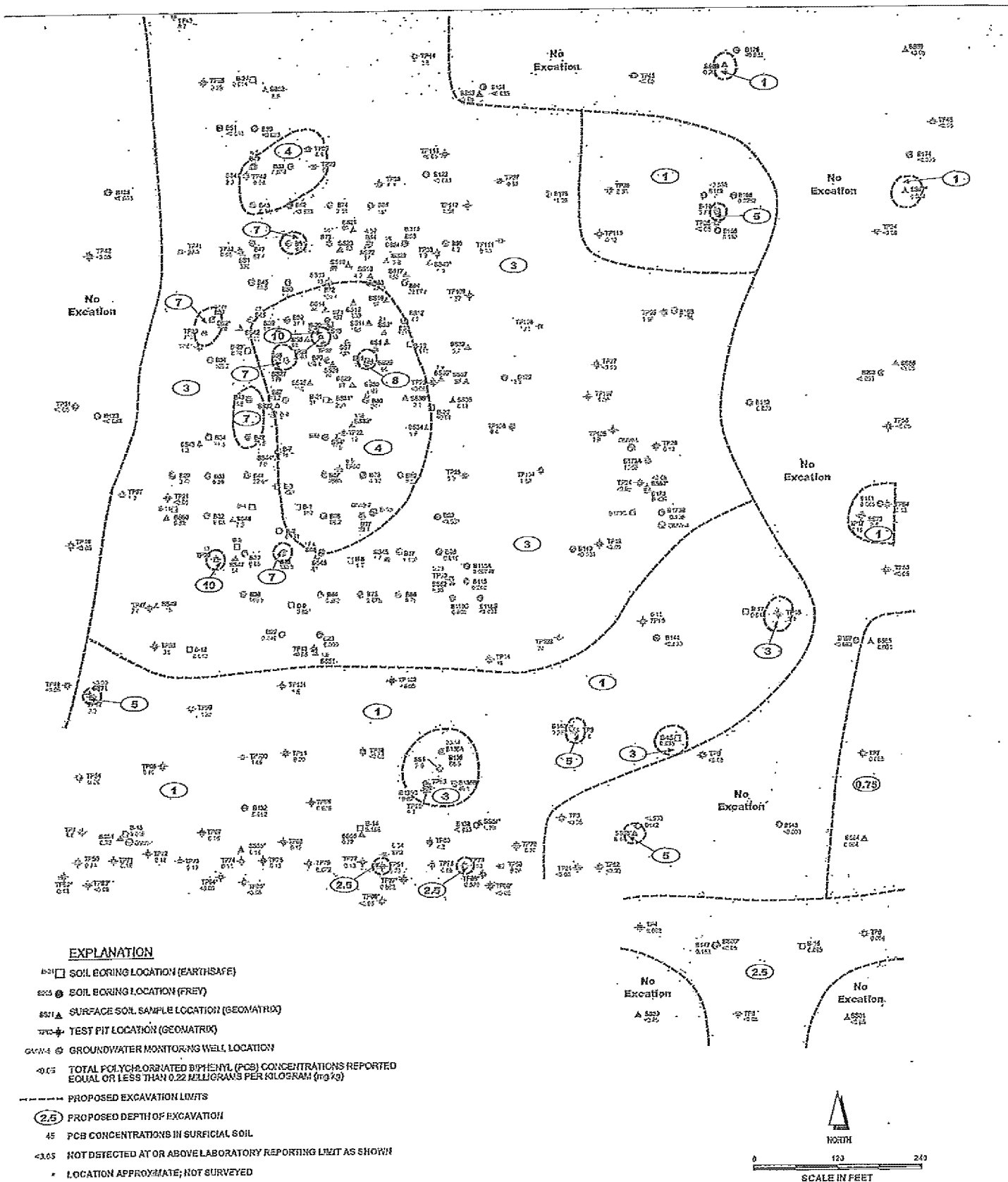
**FREY ENVIRONMENTAL, INC.**

**SITE SKETCH SHOWING  
PROPOSED EXCAVATION LIMITS FOR SOILS  
CONTAINING GREATER THAN 50 mg/kg OF PCBs**

Date: APRIL, 2005

Figure

34



Client: FRIENDS OF THE  
RIVERSIDE AIRPORT, LLC

Project No.: 458-01

**FREY ENVIRONMENTAL, INC.**

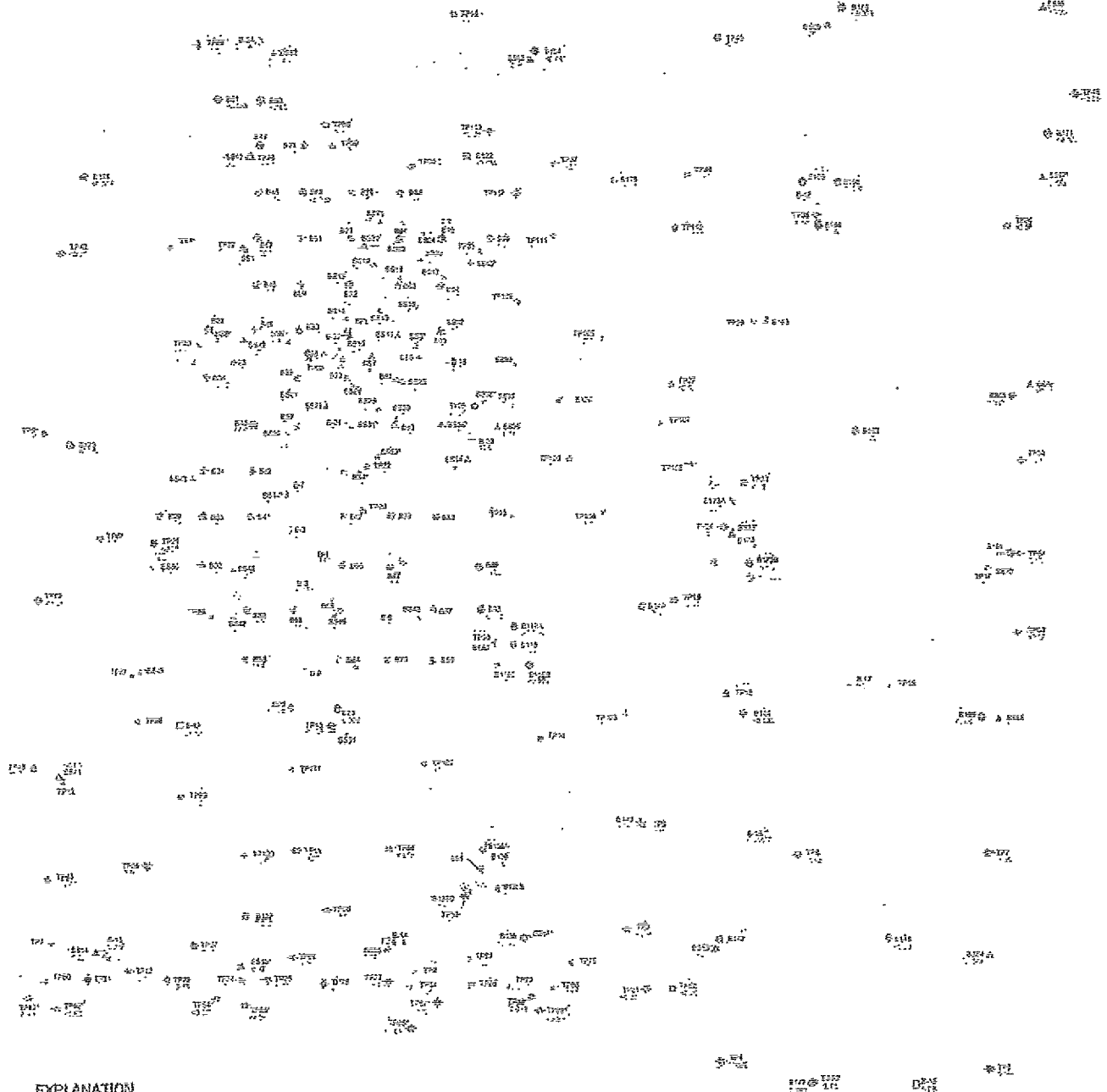
**SITE SKETCH  
SHOWING PROPOSED EXCAVATION LIMITS FOR SOILS  
CONTAINING GREATER THAN 0.050 mg/kg OF PCBs**

Date: APRIL, 2005

Fig. 4

35



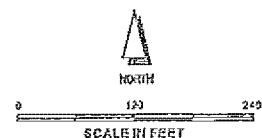


# EXPLANATION

- 101-102 SOIL BORING LOCATION (EARTHSAF)
- 103-104 SOIL BORING LOCATION (FREY)
- 105-106 SURFACE SOIL SAMPLE LOCATION (GEOMATRIX)
- 107-108 TEST PIT LOCATION (GEOMATRIX)
- 109-110 GROUNDWATER MONITORING WELL LOCATION
- 111-112 TOTAL POLYCHLORINATED BIPHENYL (PCB) CONCENTRATIONS REPORTED EQUAL OR LESS THAN 0.22 MILLIGRAMS PER KILOGRAM (mg/kg)
- 113-114 PCB CONCENTRATIONS IN SOIL SURFACE TO 0.75 FEET BGS
- 115-116 NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMIT AS SHOWN
- 117-118 LOCATION APPROXIMATE; NOT SURVEYED

## NOTES:

- All locations are approximate.
- Soil samples collected from surface to 0.75 feet below ground surface.
- Soil samples were collected by Earthsafe in December 2003; Soil samples were collected by FREY in August 2003; Soil samples were collected by Geomatrix in March and April 2004; Test pit samples were collected by Geomatrix in July through October 2004.
- Survey data are relative to Mean Sea Level, and are based upon the City of Riverside Bench Mark UP 61A. This Bench Mark has an elevation of 658.52 (based upon a 1983 adjustment), and is referenced to the National Geodetic Vertical Datum (NGVD) of 1983. The Horizontal Datum for this Bench Mark is the North American Datum of 1983, California State Plane Coordinate System, Zone 5.
- Geomatrix note about reference.



Client: FRIENDS OF THE RIVERSIDE AIRPORT, LLC

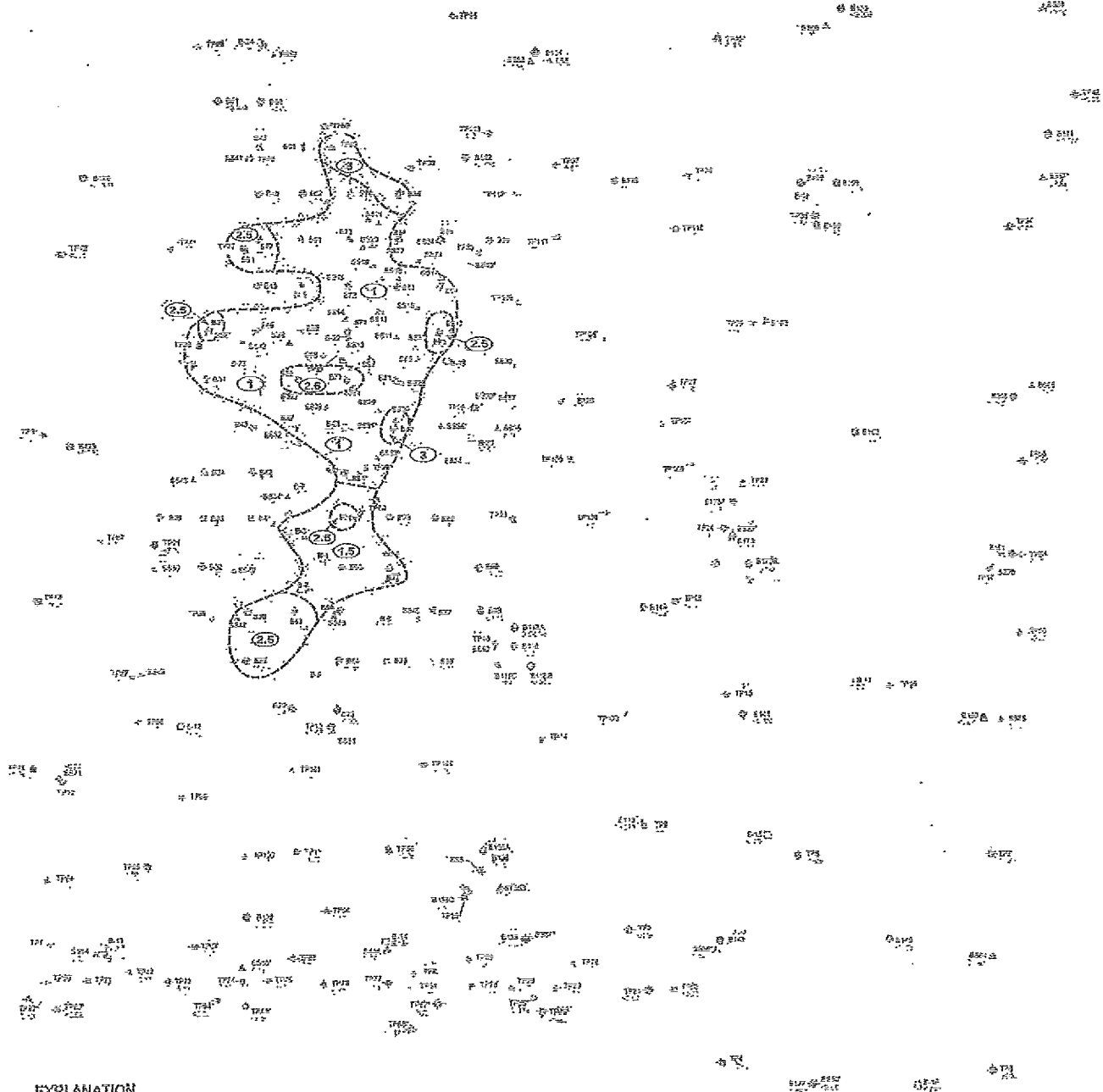
Project No.: 458-01

FREY ENVIRONMENTAL, INC.

SITE SKETCH  
SHOWING SOIL SAMPLE AND SOIL BORING LOCATIONS

Date: APRIL, 2005

37 Figure 2

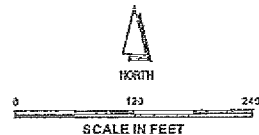


#### EXPLANATION

- SOIL BORING LOCATION (EARTHSAFE)
- SOIL BORING LOCATION (FREY)
- △ SURFACE SOIL SAMPLE LOCATION (GEOMATRIX)
- ▽ TEST PIT LOCATION (GEOMATRIX)
- GROUNDWATER MONITORING WELL LOCATION
- TOTAL POLYCHLORINATED BIPHENYL (PCB) CONCENTRATIONS REPORTED EQUAL OR LESS THAN 0.27 MILLIGRAMS PER KILOGRAM (mg/kg)
- PROPOSED EXCAVATION LIMITS
- ②.5 PROPOSED DEPTH OF EXCAVATION
- PCB CONCENTRATIONS IN SOIL SURFACE TO 0.75 FEET BGS
- <0.05 NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMIT AS SHOWN
- LOCATION APPROXIMATE; NOT SURVEYED

#### NOTES:

1. All locations are approximate.
2. Soil samples collected from surface to 0.75 feet below ground surface.
3. Soil samples were collected by EarthSafe in December 2003. Soil samples were collected by FREY in August 2004. Soil samples were collected by Geomatrix in March and April 2004. Test pit samples were collected by Geomatrix in July through October 2004.
4. Survey data are relative to Mean Sea Level, and are based upon the City of Riverside Bench Mark UP 614. This Bench Mark has an elevation of 535.62 (based upon a 1993 adjustment), and is referenced to the National Geodetic Vertical Datum (NGVD) of 1955. The Horizontal Datum for this Bench Mark is the North American Datum of 1983, California's State Plane Coordinate System, Zone 6.
5. Geomatrix note about reference.



Client: FRIENDS OF THE  
RIVERSIDE AIRPORT, LLC

Project No.: 458-01

FREY ENVIRONMENTAL, INC.

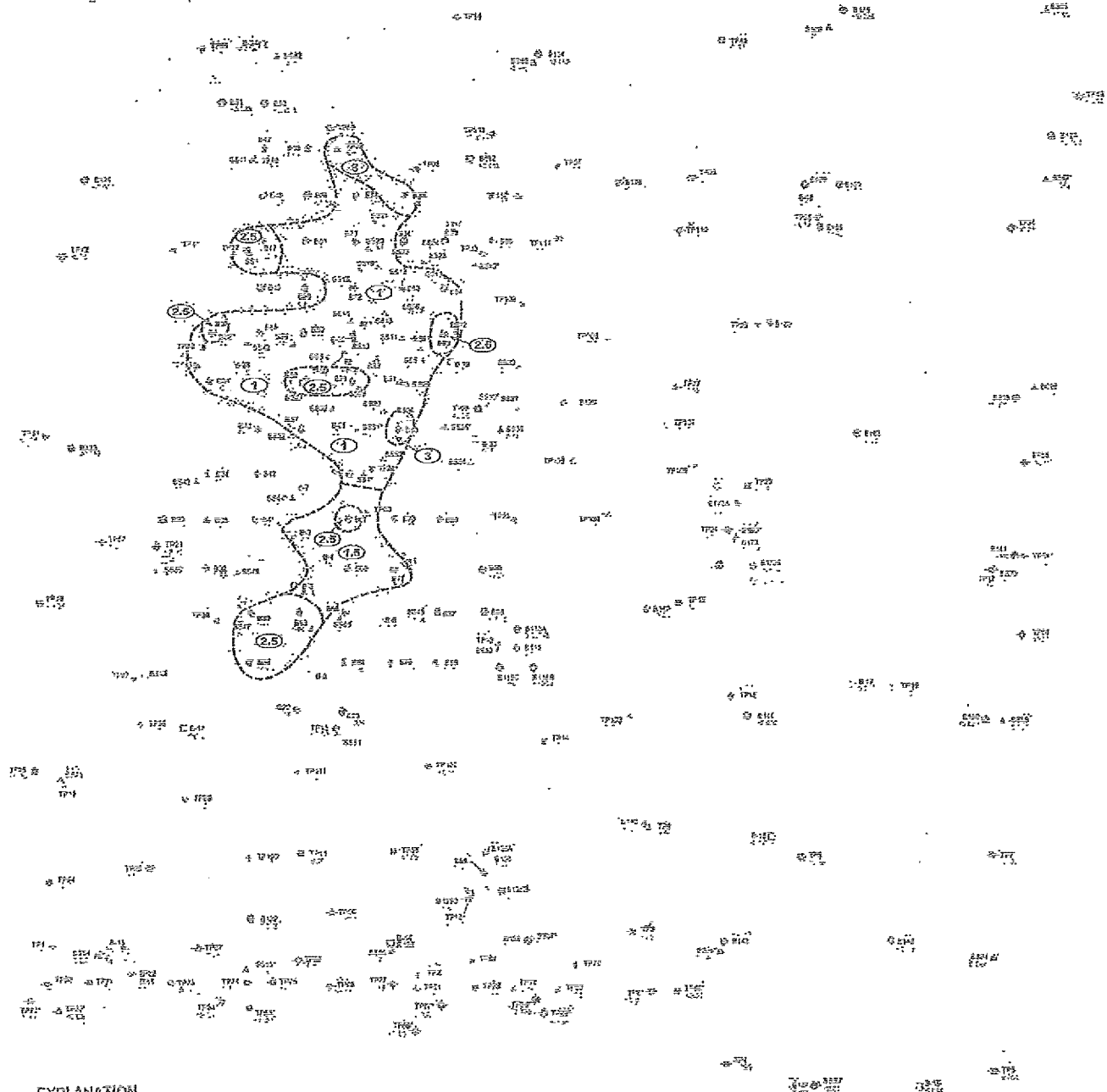
SITE SKETCH SHOWING  
PROPOSED EXCAVATION LIMITS FOR SOILS  
CONTAINING GREATER THAN 50 mg/kg OF PCBs

Date: APRIL, 2005

Figure 3

38



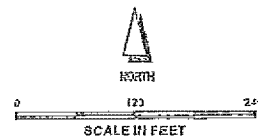


**EXPLANATION**

- SOIL BORING LOCATION (EARTHSAFE)
- SOIL BORING LOCATION (FREY)
- SURFACE SOIL SAMPLE LOCATION (GEOMATRIX)
- ⊕ TEST PIT LOCATION (GEOMATRIX)
- ⊖ GROUNDWATER MONITORING WELL LOCATION
- PROPOSED EXCAVATION LIMITS
- 2.5 PROPOSED DEPTH OF EXCAVATION
- 1 PCB CONCENTRATIONS IN SOIL SURFACE TO 0.75 FEET BGS
- <0.05 NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMIT AS SHOWN
- LOCATION APPROXIMATE; NOT SURVEYED

**NOTES:**

1. All locations are approximate.
2. SO3 samples collected from surface to 0.75 feet below ground surface.
3. SO3 samples were collected by Earthsafe in December 2003; SO3 samples were collected by FREY in August 2003; SO3 samples were collected by Geomatrix in March and April 2004; Test pit samples were collected by Geomatrix in July through October 2004.
4. Survey data are relative to Mean Sea Level, and are based upon the City of Riverside Bench Mark of 516. This Bench Mark has an elevation of 535.52 (based upon a 1993 adjustment), and is referenced to the National Geodetic Vertical Datum (NGVD) of 1929. The Horizontal Datum for this Bench Mark is the North American Datum of 1983, California State Plane Coordinate System, Zone 6.
5. Geomatrix note about reference.



Client: FRIENDS OF THE RIVERSIDE AIRPORT, LLC

Project No.: 458-01

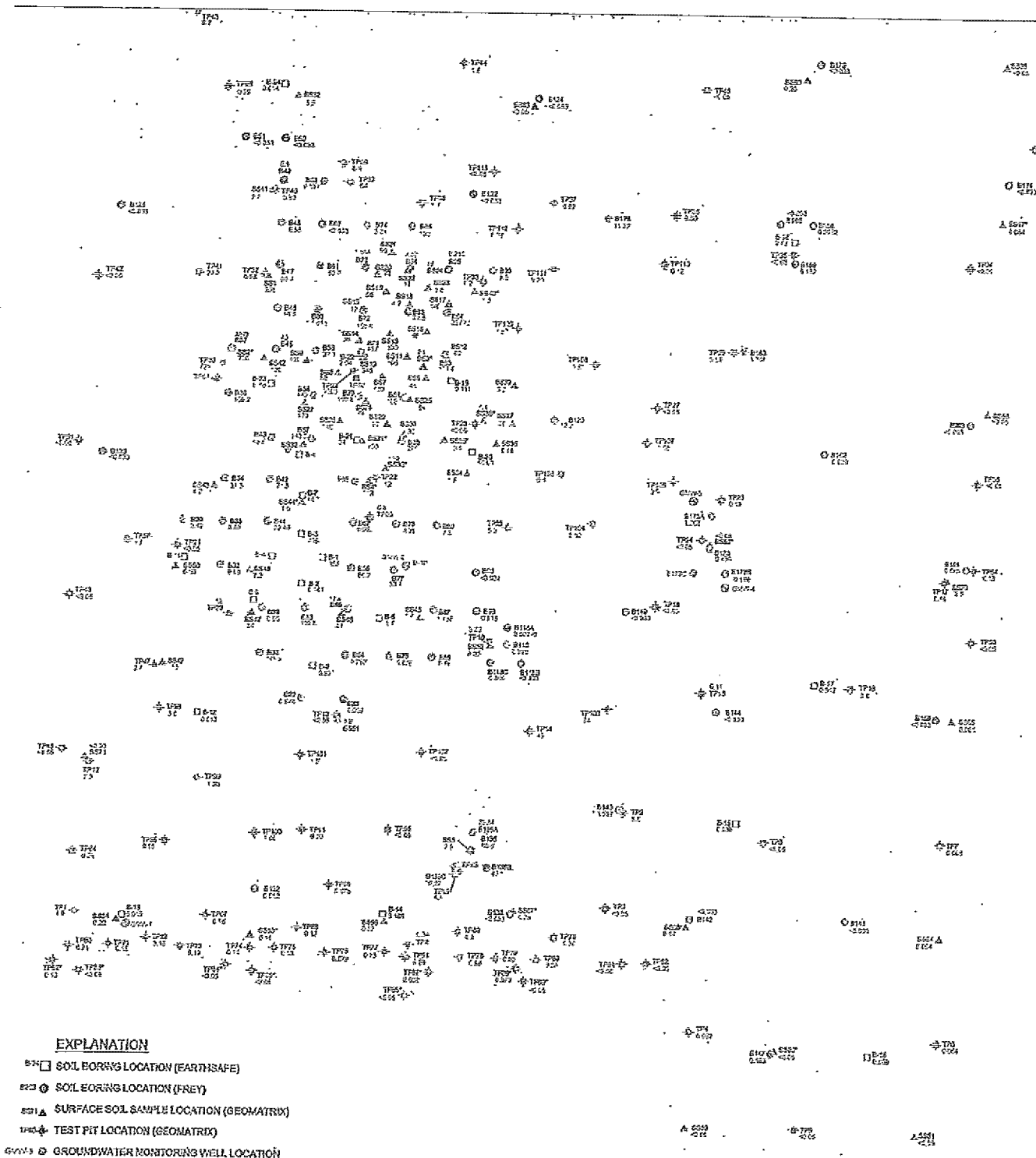
**FREY ENVIRONMENTAL, INC.**

**SITE SKETCH SHOWING  
PROPOSED EXCAVATION LIMITS FOR SOILS  
CONTAINING GREATER THAN 50 mg/kg OF PCBs**

Date: APRIL, 2005

Figure 3

39



# **EXPLANATION**

- SOIL BORING LOCATION (EARTHSAFE)
- ⊙ SOIL BORING LOCATION (FREY)
- ⊙ SURFACE SOIL SAMPLE LOCATION (GEOMATRIX)
- ⊙ TEST PIT LOCATION (GEOMATRIX)
- ⊙ GROUNDWATER MONITORING WELL LOCATION
- <0.05 TOTAL POLYCHLORINATED BIPHENYL (PCB) CONCENTRATIONS REPORTED EQUAL OR LESS THAN 0.22 MILLIGRAMS PER KILOGRAM (mg/kg)
- 45 PCB CONCENTRATIONS IN SOIL SURFACE TO 0.75 FEET BGS
- <0.05 NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMIT AS SHOWN
- \* LOCATION APPROXIMATE; NOT SURVEYED

## **NOTES:**

1. All locations are approximate.
2. Soil samples collected from surface to 0.75 feet below ground surface.
3. Soil samples were collected by Earthsafe in December 2013; Soil samples were collected by FREY in August 2013; Soil samples were collected by Geomatrix in March and April 2014; Test pit samples were collected by Geomatrix in July through October 2014.
4. Survey data are relative to Mean Sea Level, and are based upon the City of Riverside Bench Mark UF 618. This Bench Mark has an elevation of 655.62 (based upon a 1923 adjustment), and is referenced to the National Geodetic Vertical Datum (NGVD) of 1955. The Horizontal Datum for the Bench Mark is the North American Datum of 1983, California State Plane Coordinate System, Zone 8.
5. Geomatrix note about reference.

Client: FRIENDS OF THE RIVERSIDE AIRPORT, LLC

Project No.: 458-01

**FREY ENVIRONMENTAL, INC.**

**SITE SKETCH  
SHOWING SOIL SAMPLE AND SOIL BORING LOCATIONS**

Date: APRIL, 2005

Figure 2

#5

## Phase 2 Response Plan Implementation Report

Former Agricultural Park  
March 31, 2014

---

(fugitive dust) resulting from earth-moving activities onsite. Fugitive dust emissions are regulated by the South Coast Air Quality Control District (SCAQMD) under Rule 403 - Fugitive Dust.

### 4.8.1 Air Monitoring

The Work Plan for Air Monitoring was implemented to monitor the concentration of airborne particulate matter with an aggregate particle diameter of 10 microns or less (PM<sub>10</sub>), and also to measure the concentration of PCBs in air during earth-moving activities.

#### 4.8.1.1 *Particulate Monitoring*

Monitoring for concentrations of PM<sub>10</sub> at the Site was accomplished using Thermo-Electron DataRAM 4000 particulate monitors. Monitors were placed at locations upwind and downwind of site activities (see Figure 2), and operated simultaneously. The monitors provided real-time concentration and median particle size information, and logged the data for the duration of the monitoring activities. The instruments were calibrated (zeroed) before each monitoring event, and flow rates were checked on each meter to ensure they were operating at a calibrated rate of 1.7 to 2.3 liters per minute. An action level of 7 micrograms per cubic meter (µg/m<sup>3</sup>) PM<sub>10</sub> was established, measured as the difference between upwind and downwind monitors over a 1-hour period. Exceedances of this level indicated potentially elevated levels of PCBs, and additional watering or other control measures were implemented to reduce concentrations. The monitors were also manually checked on an hourly basis and the readings were recorded on field data sheets. A copy of these data sheets is included in Appendix D on a USB flash drive.

Wind speed and direction data were collected using a Davis Vantage Pro 2 Weather Station and a Kestrel 3000 pocket wind meter. Prevailing wind at the Site was generally from the north-northwest, with still mornings and gusts in the afternoon. A hand-held wind speed meter was used to gauge wind speed during gusty conditions.

#### 4.8.1.2 *PCB Concentrations in Air*

Monitoring for PCB concentrations in air was conducted using a Buck Libra constant flow air sampling pump fitted with a sample cassette developed with a combination of glass fiber filter and solid sorbent (Florisil tube), placed at the downwind monitoring location. The sample was collected over the duration of the day's activities. The volume of air sampled through the pump was calculated using the average flow rate (m<sup>3</sup>/minute) and duration of sampling (minutes). The flow rate of the pump was measured before each sampling event using a Dwyer Industries flow meter. During the first 2 weeks of excavation, samples were collected each day. Following this period, two samples were collected each week during the duration of Phase 2 excavation activities. Samples were analyzed by EMSL Analytical, Inc. for PCBs using National Institute for Occupational Safety and Health (NIOSH) Method 5503. The action level established for this project was 0.00007 mg PCB/m<sup>3</sup>. Laboratory data for analysis of the PCB collection media is provided in Appendix D on a USB flash drive. Laboratory analysis of the air sample collection

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

**RULE 403 -- FUGITIVE DUST**

*(Adopted: May 7, 1976)(Amended: November 6, 1992, July 9, 1993, February 14, 1997, December 11, 1998, April 2, 2004, June 3, 2005)*

(a) Purpose

The purpose of this Rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.

(b) Applicability

The provisions of this Rule shall apply to any activity or man-made condition capable of generating fugitive dust.

(c) Definitions

- (1) ACTIVE OPERATIONS means any source capable of generating fugitive dust, including, but not limited to, earth-moving activities, construction/demolition activities, disturbed surface area, or heavy- and light-duty vehicular movement.
- (2) AGGREGATE-RELATED PLANTS are defined as facilities that produce and / or mix sand and gravel and crushed stone.
- (3) AGRICULTURAL HANDBOOK means the region-specific guidance document that has been approved by the Governing Board or hereafter approved by the Executive Officer and the U.S. EPA. For the South Coast Air Basin, the Board-approved region-specific guidance document is the Rule 403 Agricultural Handbook dated December 1998. For the Coachella Valley, the Board-approved region-specific guidance document is the Rule 403 Coachella Valley Agricultural Handbook dated April 2, 2004.
- (4) ANEMOMETERS are devices used to measure wind speed and direction in accordance with the performance standards, and maintenance and calibration criteria as contained in the most recent Rule 403 Implementation Handbook.
- (5) BEST AVAILABLE CONTROL MEASURES means fugitive dust control actions that are set forth in Table 1 of this Rule.

- (6) BULK MATERIAL is sand, gravel, soil, aggregate material less than two inches in length or diameter, and other organic or inorganic particulate matter.
- (7) CEMENT MANUFACTURING FACILITY is any facility that has a cement kiln at the facility.
- (8) CHEMICAL STABILIZERS are any non-toxic chemical dust suppressant which must not be used if prohibited for use by the Regional Water Quality Control Boards, the California Air Resources Board, the U.S. Environmental Protection Agency (U.S. EPA), or any applicable law, rule or regulation. The chemical stabilizers shall meet any specifications, criteria, or tests required by any federal, state, or local water agency. Unless otherwise indicated, the use of a non-toxic chemical stabilizer shall be of sufficient concentration and application frequency to maintain a stabilized surface.
- (9) COMMERCIAL POULTRY RANCH means any building, structure, enclosure, or premises where more than 100 fowl are kept or maintained for the primary purpose of producing eggs or meat for sale or other distribution.
- (10) CONFINED ANIMAL FACILITY means a source or group of sources of air pollution at an agricultural source for the raising of 3,360 or more fowl or 50 or more animals, including but not limited to, any structure, building, installation, farm, corral, coop, feed storage area, milking parlor, or system for the collection, storage, or distribution of solid and liquid manure; if domesticated animals, including horses, sheep, goats, swine, beef cattle, rabbits, chickens, turkeys, or ducks are corralled, penned, or otherwise caused to remain in restricted areas for commercial agricultural purposes and feeding is by means other than grazing.
- (11) CONSTRUCTION/DEMOLITION ACTIVITIES means any on-site mechanical activities conducted in preparation of, or related to, the building, alteration, rehabilitation, demolition or improvement of property, including, but not limited to the following activities: grading, excavation, loading, crushing, cutting, planing, shaping or ground breaking.
- (12) CONTRACTOR means any person who has a contractual arrangement to conduct an active operation for another person.
- (13) DAIRY FARM is an operation on a property, or set of properties that are contiguous or separated only by a public right-of-way, that raises cows or

- produces milk from cows for the purpose of making a profit or for a livelihood. Heifer and calf farms are dairy farms.
- (14) DISTURBED SURFACE AREA means a portion of the earth's surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for emission of fugitive dust. This definition excludes those areas which have:
- (A) been restored to a natural state, such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby natural conditions;
  - (B) been paved or otherwise covered by a permanent structure; or
  - (C) sustained a vegetative ground cover of at least 70 percent of the native cover for a particular area for at least 30 days.
- (15) DUST SUPPRESSANTS are water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive dust emissions.
- (16) EARTH-MOVING ACTIVITIES means the use of any equipment for any activity where soil is being moved or uncovered, and shall include, but not be limited to the following: grading, earth cutting and filling operations, loading or unloading of dirt or bulk materials, adding to or removing from open storage piles of bulk materials, landfill operations, weed abatement through disking, and soil mulching.
- (17) DUST CONTROL SUPERVISOR means a person with the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule 403 requirements at an active operation.
- (18) FUGITIVE DUST means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person.
- (19) HIGH WIND CONDITIONS means that instantaneous wind speeds exceed 25 miles per hour.
- (20) INACTIVE DISTURBED SURFACE AREA means any disturbed surface area upon which active operations have not occurred or are not expected to occur for a period of 20 consecutive days.
- (21) LARGE OPERATIONS means any active operations on property which contains 50 or more acres of disturbed surface area or any earth-moving operation with a daily earth-moving or throughput volume of 3,850 cubic

- meters (5,000 cubic yards) or more three times during the most recent 365-day period.
- (22) OPEN STORAGE PILE is any accumulation of bulk material, which is not fully enclosed, covered or chemically stabilized, and which attains a height of three feet or more and a total surface area of 150 or more square feet.
  - (23) PARTICULATE MATTER means any material, except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions.
  - (24) PAVED ROAD means a public or private improved street, highway, alley, public way, or easement that is covered by typical roadway materials, but excluding access roadways that connect a facility with a public paved roadway and are not open to through traffic. Public paved roads are those open to public access and that are owned by any federal, state, county, municipal or any other governmental or quasi-governmental agencies. Private paved roads are any paved roads not defined as public.
  - (25) PM<sub>10</sub> means particulate matter with an aerodynamic diameter smaller than or equal to 10 microns as measured by the applicable State and Federal reference test methods.
  - (26) PROPERTY LINE means the boundaries of an area in which either a person causing the emission or a person allowing the emission has the legal use or possession of the property. Where such property is divided into one or more sub-tenancies, the property line(s) shall refer to the boundaries dividing the areas of all sub-tenancies.
  - (27) RULE 403 IMPLEMENTATION HANDBOOK means a guidance document that has been approved by the Governing Board on April 2, 2004 or hereafter approved by the Executive Officer and the U.S. EPA.
  - (28) SERVICE ROADS are paved or unpaved roads that are used by one or more public agencies for inspection or maintenance of infrastructure and which are not typically used for construction-related activity.
  - (29) SIMULTANEOUS SAMPLING means the operation of two PM<sub>10</sub> samplers in such a manner that one sampler is started within five minutes of the other, and each sampler is operated for a consecutive period which must be not less than 290 minutes and not more than 310 minutes.
  - (30) SOUTH COAST AIR BASIN means the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange

County as defined in California Code of Regulations, Title 17, Section 60104. The area is bounded on the west by the Pacific Ocean, on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains, and on the south by the San Diego county line.

- (31) STABILIZED SURFACE means any previously disturbed surface area or open storage pile which, through the application of dust suppressants, shows visual or other evidence of surface crusting and is resistant to wind-driven fugitive dust and is demonstrated to be stabilized. Stabilization can be demonstrated by one or more of the applicable test methods contained in the Rule 403 Implementation Handbook.
  - (32) TRACK-OUT means any bulk material that adheres to and agglomerates on the exterior surface of motor vehicles, haul trucks, and equipment (including tires) that have been released onto a paved road and can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.
  - (33) TYPICAL ROADWAY MATERIALS means concrete, asphaltic concrete, recycled asphalt, asphalt, or any other material of equivalent performance as determined by the Executive Officer, and the U.S. EPA.
  - (34) UNPAVED ROADS means any unsealed or unpaved roads, equipment paths, or travel ways that are not covered by typical roadway materials. Public unpaved roads are any unpaved roadway owned by federal, state, county, municipal or other governmental or quasi-governmental agencies. Private unpaved roads are all other unpaved roadways not defined as public.
  - (35) VISIBLE ROADWAY DUST means any sand, soil, dirt, or other solid particulate matter which is visible upon paved road surfaces and which can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.
  - (36) WIND-DRIVEN FUGITIVE DUST means visible emissions from any disturbed surface area which is generated by wind action alone.
  - (37) WIND GUST is the maximum instantaneous wind speed as measured by an anemometer.
- (d) Requirements
- (1) No person shall cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that:



- (A) the dust remains visible in the atmosphere beyond the property line of the emission source; or
  - (B) the dust emission exceeds 20 percent opacity (as determined by the appropriate test method included in the Rule 403 Implementation Handbook), if the dust emission is the result of movement of a motorized vehicle.
- (2) No person shall conduct active operations without utilizing the applicable best available control measures included in Table 1 of this Rule to minimize fugitive dust emissions from each fugitive dust source type within the active operation.
- X (3) No person shall cause or allow PM<sub>10</sub> levels to exceed 50 micrograms per cubic meter when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. EPA-approved equivalent method for PM<sub>10</sub> monitoring. If sampling is conducted, samplers shall be:
- (A) Operated, maintained, and calibrated in accordance with 40 Code of Federal Regulations (CFR), Part 50, Appendix J, or appropriate U.S. EPA-published documents for U.S. EPA-approved equivalent method(s) for PM<sub>10</sub>.
  - (B) Reasonably placed upwind and downwind of key activity areas and as close to the property line as feasible, such that other sources of fugitive dust between the sampler and the property line are minimized.
- (4) No person shall allow track-out to extend 25 feet or more in cumulative length from the point of origin from an active operation. Notwithstanding the preceding, all track-out from an active operation shall be removed at the conclusion of each workday or evening shift.
- (5) No person shall conduct an active operation with a disturbed surface area of five or more acres, or with a daily import or export of 100 cubic yards or more of bulk material without utilizing at least one of the measures listed in subparagraphs (d)(5)(A) through (d)(5)(E) at each vehicle egress from the site to a paved public road.
- (A) Install a pad consisting of washed gravel (minimum-size: one inch) maintained in a clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long.

## **SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

### **RULE 1150 EXCAVATION OF LANDFILL SITES PERMIT APPLICATION INSTRUCTIONS**

#### **GENERAL INFORMATION:**

This document contains instructions for providing information necessary for the AQMD to process permit applications for Rule 1150 Excavation Permits.

One Application for Permit to Construct and Operate Form 400-A (Indicate in Application Type: Compliance Plan) and one Form 400-CEQA (California Environmental Quality Act Applicability) is generally required for each excavation project. If the project consists of treatment or processing of the excavated materials using equipment which requires a permit to construct/operate, a separate application (Form 400-A) should be filed for each equipment. Examples of these equipment include crushers, screens, mixers, conveyers, vapor extraction systems, incinerators, internal combustion engines (>50 HP), etc.

#### **APPLICABILITY:**

Except otherwise exempt by Rule 1150(c), a Rule 1150 Excavation Permit is required for all excavation activities involving a landfill. A landfill by definition of the Rule is a place, location, tract of land, area, or premises in use, or which has been used for the disposal of waste. In addition to excavations at a typical landfill being subject to this Rule, excavations of contaminated soil at any location will be subject to this Rule if the contamination occurred from the disposal of unwanted material at the site.

#### **APPLICABLE RULES & REGULATIONS:**

##### Reg III

Rule 306      Plan Fees, including filing fee per Rule 306(c) and initial payment of evaluation fees per Rule 306(h)(1).

##### Reg. IV

Rule 402      Nuisance  
Rule 403      Fugitive Dust

##### Reg. XI

Rule 1150      Excavation of Landfill Sites  
Rule 1166      VOC Emissions from Decontamination of Soil

(Copies of Rules & Regulations of AQMD can be obtained through our Public Information Center at (909) 396-3600, or at the AQMD internet home page, [www.aqmd.gov](http://www.aqmd.gov).)

## EMISSIONS:

ROG and particulate emissions are expected from the excavation activities. These emissions shall be mitigated using the measures identified in Item 10 under Requirements.

## REQUIREMENTS:

An Excavation Management Plan must be submitted to and approved by the AQMD. The Plan shall include the following information:

1. Identification (including company name, address, contact person and phone number) of project owner, excavation contractor, on-site safety coordinator, and the firm or individuals preparing the excavation management plan.
2. A description of the background of the project site and the purpose of the excavation.
3. A contour map showing the location of the excavation site, the proposed excavation area, and the surrounding area up to 2,500 feet away from the perimeter of the proposed excavation area. The map should identify all land uses in the area and highlight areas of high population such as schools, hospitals, residential areas, restaurants, and shopping centers.
4. A list of materials buried or suspected materials buried in the site based on all available records.
5. Results of any boring tests done to characterize the disposal site including the identification of any EPA priority pollutants.
6. Results of landfill gas analyses or soil vapor phase analyses including the concentrations of methane, sulfur compounds, and any speciated non-methane hydrocarbons such as benzene and vinyl chloride, etc.
7. The total amount of material to be excavated and the landfill to which the excavated material will be hauled.
8. Scheduled excavation starting and completion dates, and number of working days required for the excavation.
9. A detailed description of how the excavation will be conducted including:
  - excavation equipment
  - surface area of excavation workface
  - surface area of refuse or contaminated soil to be exposed to the atmosphere at any one time
  - excavated material handling method
  - vehicles hauling the excavated material
  - a site layout showing the excavation area, vehicle route, equipment/vehicle cleaning area, etc.

10. A detailed description of the mitigation measures to be implemented during excavation and transportation to minimize potential emissions. The mitigation measures in general includes, but not be limited to:
- limited excavation workface
  - minimized soil disturbance/transfer
  - minimized refuse/contaminated soil exposure
  - limited working hours
  - use of long duration foams, plastic sheeting, and/or clean dirt to cover refuse/contaminated soil during non-working hours and/or when excessive emissions are detected.
  - water spraying
  - cleaning and covering of the trucks
  - good housekeeping
11. A detailed description of monitoring to be conducted during the excavation. This includes:
- continuous monitoring for organic vapors with OVA's (FID, PID, etc.) at the work face and property line (or other downwind locations within the property line)
  - ambient air sampling for particulates, heavy metals, asbestos, and/or specific organic air toxics
  - monitoring for odors at and beyond the property line
  - monitoring for wind speed and direction
12. A contingency plan for actions to be taken when odors or elevated concentrations (specify the concentrations) of air emissions are detected, or when complaints are received from any public member.
13. A provision that the excavation activities will cease immediately when the operator is notified by a District staff that a public nuisance has occurred as required by Rule 1150 (b)(3).

#### **RULE 1150 STANDARD CONDITIONS:**

The following is a list of standard conditions that are used for Rule 1150 Permits. Conditions for an actual Permit may be a combination of the following conditions and specific restrictions applicable to the excavation under evaluation. However, all of the following conditions may not be appropriate for every excavation. The conditions for each Permit should be tailored to fit the needs of the individual excavation under review.

1. THIS EXCAVATION SHALL BE CONDUCTED IN COMPLIANCE WITH ALL PLANS AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
2. THE EXCAVATION SHALL BE COMPLETED BY \_\_\_\_\_, \_\_\_\_\_, OR WITHIN \_\_\_\_\_ CALENDAR DAYS AFTER THE EXCAVATION COMMENCES, WHICHEVER OCCURS FIRST, UNLESS AN EXTENSION IS OTHERWISE APPROVED IN WRITING BY THE SCAQMD. ANY EXTENSION REQUEST SHALL BE SUBMITTED IN WRITING TO THE SCAQMD AND SHALL INCLUDE THE REASONS THE EXTENSION IS REQUIRED, THE LENGTH OF THE EXTENSION, AND THE STATUS OF THE EXCAVATION TO DATE.
3. THE SCAQMD SHALL BE NOTIFIED IN WRITING AT LEAST TWO (2) DAYS PRIOR TO THE EXCAVATION COMMENCES AND WITHIN FIVE (5) DAYS AFTER IT IS COMPLETED.
4. THIS EXCAVATION PERMIT IS VALID ONLY FOR THE REMOVAL OF APPROXIMATELY \_\_\_\_\_ CUBIC YARDS OF (EXCAVATED MATERIAL AND REFUSE) (SOIL CONTAMINATED WITH \_\_\_\_\_).

5. EXCAVATION SHALL NOT BE CONDUCTED BETWEEN THE HOURS OF \_\_\_\_\_ AND \_\_\_\_\_ OR ON SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS.
6. EXCAVATION SHALL NOT BE CONDUCTED ON DAYS WHEN THE SCAQMD FORECASTS FIRST, SECOND OR THIRD STAGE EPISODES FOR AREA NUMBER \_\_, OR WHEN THE SCAQMD REQUIRES COMPANIES IN AREA NUMBER \_\_ TO IMPLEMENT THEIR FIRST, SECOND OR THIRD STAGE EPISODE PLANS. EPISODE FORECASTS FOR THE FOLLOWING DAY CAN BE OBTAINED BY CALLING (800) 445-3826 OR (800) 242-4666.
7. EXCAVATION SHALL NOT BE CONDUCTED WHEN THE WIND SPEED IS GREATER THAN 15 M.P.H. (AVERAGED OVER 15 MINUTES) OR THE WIND SPEED INSTANTANEOUSLY EXCEEDS 25 M.P.H.

or

EXCAVATION SHALL NOT BE CONDUCTED WHEN THE WIND SPEED IS GREATER THAN \_\_ M.P.H. (AVERAGED OVER 15 CONSECUTIVE MINUTES) AND THE WIND DIRECTION IS FROM THE ARC DEFINED BY \_\_\_\_\_ THROUGH \_\_\_\_\_ TO \_\_\_\_\_.

8. DURING EXCAVATION, ALL WORKING AREAS, EXCAVATED MATERIAL AND UNPAVED ROADWAYS SHALL BE WATERED DOWN UNTIL THE SURFACE IS MOIST AND THEN MAINTAINED IN A MOIST CONDITION TO MINIMIZE DUST AND EMISSIONS.
9. WHEN LOADING IS COMPLETED AND DURING TRANSPORT, NO MATERIAL SHALL EXTEND ABOVE THE SIDES OR REAR OF THE TRUCK OR TRAILER WHICH WILL HAUL THE EXCAVATED MATERIAL.
10. (for inactive landfills)

EXCAVATED REFUSE SHALL NOT BE STOCKPILED ON-SITE. ALL EXCAVATED REFUSE SHALL BE DEPOSITED DIRECTLY INTO THE TRUCKS OR TRAILERS WHICH WILL HAUL IT. THE TRUCK BEDS OR TRAILERS SHALL BE COMPLETELY COVERED WITH AN IMPERMEABLE COVER, WITH SUCH COVERS TIED DOWN. ALL SEAMS SHALL BE SEALED TO PREVENT ANY MATERIALS FROM ESCAPING DURING TRANSPORT.

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(for active landfills)

EXCAVATED REFUSE SHALL BE TRANSPORTED TO THE ACTIVE WORKING FACE OF THE LANDFILL WITHIN ONE HOUR OF GENERATION OR AS DEEMED NECESSARY BY THE SCAQMD PERSONNEL.

11. THE EXTERIOR OF TRUCKS OR CARS (INCLUDING THE TIRES) SHALL BE CLEANED OFF PRIOR TO LEAVING THE EXCAVATION SITE.

12. THE EXCAVATION WORK FACE EXPOSED TO THE ATMOSPHERE SHALL NOT EXCEED (\_\_\_\_ SQUARE FEET)(\_\_\_\_ FT X \_\_\_\_ FT).

or

THE EXCAVATION WORK FACE WHICH EXPOSES REFUSE OR OTHER EMISSION GENERATING MATERIALS TO THE ATMOSPHERE SHALL NOT EXCEED \_\_\_\_ SQUARE FEET.

13. ALL EXCAVATED REFUSE SHALL BE COVERED WITH EITHER A MINIMUM OF 6 INCHES OF CLEAN SOIL, APPROVED FOAM OR HEAVY-DUTY PLASTIC SHEETING WHENEVER THE EXCAVATION IS NOT ACTIVELY IN PROGRESS, AND AT THE END OF EACH WORKING DAY. FOAM BY ITSELF SHALL NOT BE USED AS A NIGHT COVER IF IT IS RAINING OR RAIN IS PREDICTED BY THE NATIONAL WEATHER SERVICE PRIOR TO THE NEXT SCHEDULED DAY OF EXCAVATION.
14. VOC CONTAMINATED SOIL (AS DEFINED BY RULE 1166) SHALL NOT BE SPREAD ONSITE OR OFFSITE IF IT RESULTS IN UNCONTROLLED EVAPORATION OF VOC TO THE ATMOSPHERE.
15. DURING EXCAVATION, IF A CONSIDERABLE NUMBER OF COMPLAINTS ARE RECEIVED, ALL WORK SHALL CEASE AND THE APPROVED MITIGATION MEASURES SHALL BE IMPLEMENTED IMMEDIATELY. OTHER MITIGATION MEASURES WHICH ARE DEEMED APPROPRIATE BY SCAQMD PERSONNEL TO ABATE A NUISANCE CONDITION SHALL BE IMPLEMENTED UPON REQUEST.
16. ALL EXCAVATED MATERIAL SHALL BE TRANSPORTED IN SUCH A MANNER AS TO PREVENT ANY EMISSIONS OF HAZARDOUS MATERIALS.
17. ALL HAZARDOUS MATERIALS SHALL BE TRANSPORTED IN CONTAINERS CLEARLY MARKED AS TO THE TYPES OF MATERIAL CONTAINED AND WHAT PROCEDURES SHOULD BE FOLLOWED IN CASE OF ACCIDENTAL SPILLS.
18. EXCAVATED LIQUID HAZARDOUS MATERIALS WITH THE POTENTIAL TO CAUSE AIR EMISSIONS SHALL BE ENCAPSULATED OR ENCLOSED IN CONTAINERS WITH SEALED LIDS BEFORE LOADING INTO THE TRANSPORT VEHICLES.
19. ALL MATERIALS THAT ARE LISTED AS HAZARDOUS BY A FEDERAL OR STATE AGENCY SHALL BE CONSIDERED "HAZARDOUS MATERIALS" FOR THE PURPOSE OF THIS PERMIT.

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20. DURING EXCAVATION, MONITORING FOR THE FOLLOWING HAZARDOUS MATERIALS SHALL BE CONDUCTED IN A MANNER APPROVED BY THE SCAQMD. SAMPLES MUST BE ANALYZED AND RESULTS REPORTED TO THE SCAQMD WITHIN \_\_\_ DAYS OF TAKING THE SAMPLE. OTHER HAZARDOUS MATERIALS MAY BE ADDED TO THIS LIST IF THEIR PRESENCE BECOMES KNOWN IN THE EXCAVATED MATERIALS:
- |                     |                          |
|---------------------|--------------------------|
| A. VINYL CHLORIDE   | E. HEAVY METALS-Pb,Cr,Hg |
| B. HYDROGEN CYANIDE | F. BENZENE               |
| C. DDT              | G. ETC.                  |
| D. ASBESTOS         |                          |
21. DURING EXCAVATION, CONTINUOUS MONITORING AND RECORDING OF THE WIND SPEED AND DIRECTION SHALL BE CONDUCTED AT A SITE APPROVED BY THE SCAQMD.
22. DURING EXCAVATION, MONITORING FOR ORGANICS AS METHANE USING AN ORGANIC VAPOR ANALYZER (OVA) OR OTHER MONITOR APPROVED BY THE SCAQMD SHALL BE CONDUCTED CONTINUOUSLY AT THE WORKING FACE AND AT THE PROPERTY LINE (OR OTHER APPROVED LOCATIONS) DIRECTLY DOWNWIND OF THE EXCAVATION. THE MAXIMUM SUSTAINED READINGS SHALL BE RECORDED EVERY 15 MINUTES.
23. IF THE OVA OR OTHER APPROVED ORGANIC MONITOR SHOWS A SUSTAINED (GREATER THAN 15 SECONDS) READING OF 2,000 PPM OR GREATER AT THE WORKING FACE, THE EXCAVATION SHALL CEASE AND THE APPROVED MITIGATION MEASURES IMPLEMENTED IMMEDIATELY. EXCAVATION SHALL NOT RESUME UNTIL THE READINGS RETURN TO THE BACKGROUND LEVEL.
24. IF THE OVA OR OTHER APPROVED ORGANIC MONITOR SHOWS A SUSTAINED (GREATER THAN 15 SECONDS) READING OF 200 PPM OR GREATER DOWNWIND FROM THE SITE AT THE PROPERTY LINE (OR OTHER APPROVED LOCATIONS), THE EXCAVATION SHALL CEASE AND THE APPROVED MITIGATION MEASURES IMPLEMENTED IMMEDIATELY. EXCAVATION SHALL NOT RESUME UNTIL THE READINGS RETURN TO THE BACKGROUND LEVEL.
25. DURING EXCAVATION, HIGH VOLUME SAMPLING FOR SUSPENDED PARTICULATES SHALL BE CONDUCTED UPWIND AND DOWNWIND OF THE EXCAVATION SITE AT LOCATIONS APPROVED BY THE SCAQMD. SAMPLES SHALL BE TAKEN DURING THE FOLLOWING PERIODS:
- A. ACTIVE WORK PERIOD - FROM START OF EXCAVATION (time) UNTIL ACTIVITY IS CEASED FOR THE DAY, BUT NOT LESS THAN 5 HOURS OF SAMPLING TIME.
- B. INACTIVE WORK PERIOD - IMMEDIATELY FOLLOWING THE ACTIVE WORK PERIOD AND ENDING AT 6 A.M., AND A 24 HOUR SAMPLE FOR EACH NON-WORKING DAY.

26. ALL HIGH VOLUME SAMPLES TAKEN DURING ACTIVE WORK PERIODS SHALL BE ANALYZED FOR TOTAL SUSPENDED PARTICULATES AND (other contaminants). RESULTS OF THESE ANALYSES SHALL BE SUBMITTED TO THE SCAQMD WITHIN 5 DAYS OF SAMPLING. ADDITIONAL SAMPLING AND ANALYSES SHALL BE CONDUCTED UPON REQUEST BY THE SCAQMD.

X 27. IF ANY ANALYTICAL RESULTS SHOW THE UPWIND AND DOWNWIND DIFFERENTIAL CONCENTRATIONS OF CONTAMINANTS EXCEEDING THE FOLLOWING LIMITS, EXCAVATION ACTIVITIES SHALL CEASE UNTIL ADDITIONAL MITIGATION MEASURES ARE SUBMITTED TO AND APPROVED BY THE SCAQMD. THESE ADDITIONAL MITIGATION MEASURES SHALL BE IMPLEMENTED WHEN THE ACTIVITIES RESUME.

CONTAMINANT

CONDITION

X PM10 50 ug/m<sup>3</sup>  
X contaminants ug/m<sup>3</sup>

28. ALL SAMPLES TAKEN BY THE HIGH VOLUME SAMPLERS SHALL BE PROPERLY STORED FOR AT LEAST 10 DAYS AFTER THE EXCAVATION IS COMPLETED.

29. ALL MONITORS SHALL BE CALIBRATED DAILY USING A METHOD APPROVED BY THE SCAQMD.

30. IF A DISTINCT ODOR (LEVEL III OR GREATER) RESULTING FROM THE EXCAVATION IS DETECTED AT OR BEYOND THE PROPERTY LINE, THE EXCAVATION SHALL CEASE AND THE APPROVED MITIGATION MEASURES IMPLEMENTED IMMEDIATELY. ODOR LEVELS WILL BE DETERMINED BY SCAQMD PERSONNEL OR ON-SITE SAFETY COORDINATOR IN THE ABSENCE OF SCAQMD PERSONNEL.

31. ALL RECORDS OF EXCAVATION WORKING HOURS, ANALYTICAL RESULTS, DAILY AMOUNTS OF MATERIALS EXCAVATED AND HAULED OFFSITE, AND OTHER RECORDS REQUIRED BY THIS PERMIT SHALL BE KEPT ON FILE FOR AT LEAST TWO YEARS AND MADE AVAILABLE TO THE SCAQMD UPON REQUEST.

32. MITIGATION MEASURES, OTHER THAN THOSE INDICATED IN THESE CONDITIONS, WHICH ARE DEEMED APPROPRIATE BY SCAQMD PERSONNEL AS NECESSARY TO PROTECT THE COMFORT, REPOSE, HEALTH OR SAFETY OF THE PUBLIC, SHALL BE IMPLEMENTED UPON REQUEST.

33. THIS PERMIT OR A COPY OF THIS PERMIT SHALL BE PRESENT AT THE EXCAVATION SITE.

Other governmental agencies may require approval before any excavation begins. It shall be the responsibility of the applicant to obtain that approval. The South Coast Air Quality Management District shall not be responsible or liable for any losses because of measures required or taken pursuant to the requirements of this approved Excavation Management Plan.



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As a follow-up to Phase 1 activities, additional soil was removed from the former sewer line location and confirmation samples were collected. These samples are identified as P6 through P9. Refer to Figure 5 for the location of these samples.

In Table 1, a list of each PCB confirmation sample and subsequent step-out samples (if necessary) is provided. In some instances, step-outs from smaller excavations merged into other excavations so that there was no sidewall material remaining to sample. An explanation of these occurrences is listed below:

- CS19Sa - Sample exceeded 0.22 mg/kg. The step-out of this sidewall merged with the brine basin area excavation; no sidewall material remaining to sample.
- CS310Nc - The north sidewall at this location was stepped out into the adjacent excavation for CS431; no sidewall material remaining to sample.
- CS422Ea - The east sidewall at this location was stepped out into the adjacent excavation for CS398B; no sidewall material remaining to sample.

#### 4.7 SOIL LOADING, TRANSPORTATION, AND DISPOSAL

Soil exceeding the remediation cleanup goals was excavated and transported offsite to the WMI Azusa Land Reclamation facility in Azusa, California, for disposal. This facility is permitted to accept low-level PCB-impacted soil. Excavated soil received by this facility was sampled and characterized prior to acceptance.

Each truckload of impacted soil was transported under a non-hazardous waste manifest. Copies of the manifests are presented on a USB flash drive included in Appendix C. Each truckload was also weighed as it entered the facility. Based on these weights, the total tonnage of PCB- and/or dioxin/furan-impacted soil removed during the remedial excavation from the Site and disposed by FRA was 165,226.64 tons. Summary tables of weights per truckload are also provided in Appendix C.

In addition to PCB-impacted soil, some clean soil was removed from within the excavation area during Phase 2. A total of 30,782 tons of clean soil was removed and hauled offsite for disposal. This soil was transported to Puente Hills Landfill in the City of Industry, California (14,436 tons), and WMI Nu-Way Land Reclamation in Irwindale, California (16,346 tons). Including the removal of clean soil from the Site, a total of 196,008.64 tons of soil were removed during Phase 2 activities. Imported soil was not brought onsite to backfill any of the excavation areas.

#### 4.8 AIR MONITORING AND DUST CONTROL

Air monitoring onsite was performed according to the Work Plan for Air Monitoring from Appendix E of the *Revised Response Plan* (FREY, 2006a). Air monitoring equipment and dust control measures were used to monitor and reduce the amount of airborne particulate matter

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(fugitive dust) resulting from earth-moving activities onsite. Fugitive dust emissions are regulated by the South Coast Air Quality Control District (SCAQMD) under Rule 403 - Fugitive Dust.

#### 4.8.1 Air Monitoring

The Work Plan for Air Monitoring was implemented to monitor the concentration of airborne particulate matter with an aggregate particle diameter of 10 microns or less (PM<sub>10</sub>), and also to measure the concentration of PCBs in air during earth-moving activities.

##### 4.8.1.1 *Particulate Monitoring*

Monitoring for concentrations of PM<sub>10</sub> at the Site was accomplished using Thermo-Electron DataRAM 4000 particulate monitors. Monitors were placed at locations upwind and downwind of site activities (see Figure 2), and operated simultaneously. The monitors provided real-time concentration and median particle size information, and logged the data for the duration of the monitoring activities. The instruments were calibrated (zeroed) before each monitoring event, and flow rates were checked on each meter to ensure they were operating at a calibrated rate of 1.7 to 2.3 liters per minute. An action level of 7 micrograms per cubic meter (µg/m<sup>3</sup>) PM<sub>10</sub> was established, measured as the difference between upwind and downwind monitors over a 1-hour period. Exceedances of this level indicated potentially elevated levels of PCBs, and additional watering or other control measures were implemented to reduce concentrations. The monitors were also manually checked on an hourly basis and the readings were recorded on field data sheets. A copy of these data sheets is included in Appendix D on a USB flash drive.

Wind speed and direction data were collected using a Davis Vantage Pro 2 Weather Station and a Kestrel 3000 pocket wind meter. Prevailing wind at the Site was generally from the north-northwest, with still mornings and gusts in the afternoon. A hand-held wind speed meter was used to gauge wind speed during gusty conditions.

##### 4.8.1.2 *PCB Concentrations in Air*

Monitoring for PCB concentrations in air was conducted using a Buck Libra constant flow air sampling pump fitted with a sample cassette developed with a combination of glass fiber filter and solid sorbent (Florisol tube), placed at the downwind monitoring location. The sample was collected over the duration of the day's activities. The volume of air sampled through the pump was calculated using the average flow rate (m<sup>3</sup>/minute) and duration of sampling (minutes). The flow rate of the pump was measured before each sampling event using a Dwyer Industries flow meter. During the first 2 weeks of excavation, samples were collected each day. Following this period, two samples were collected each week during the duration of Phase 2 excavation activities. Samples were analyzed by EMSL Analytical, Inc. for PCBs using National Institute for Occupational Safety and Health (NIOSH) Method 5503. The action level established for this project was 0.00007 mg PCB/m<sup>3</sup>. Laboratory data for analysis of the PCB collection media is provided in Appendix D on a USB flash drive. Laboratory analysis of the air sample collection

**DUST MONITORING LOG  
COX PROPERTIES - AG PARK  
RIVERSIDE, CA**

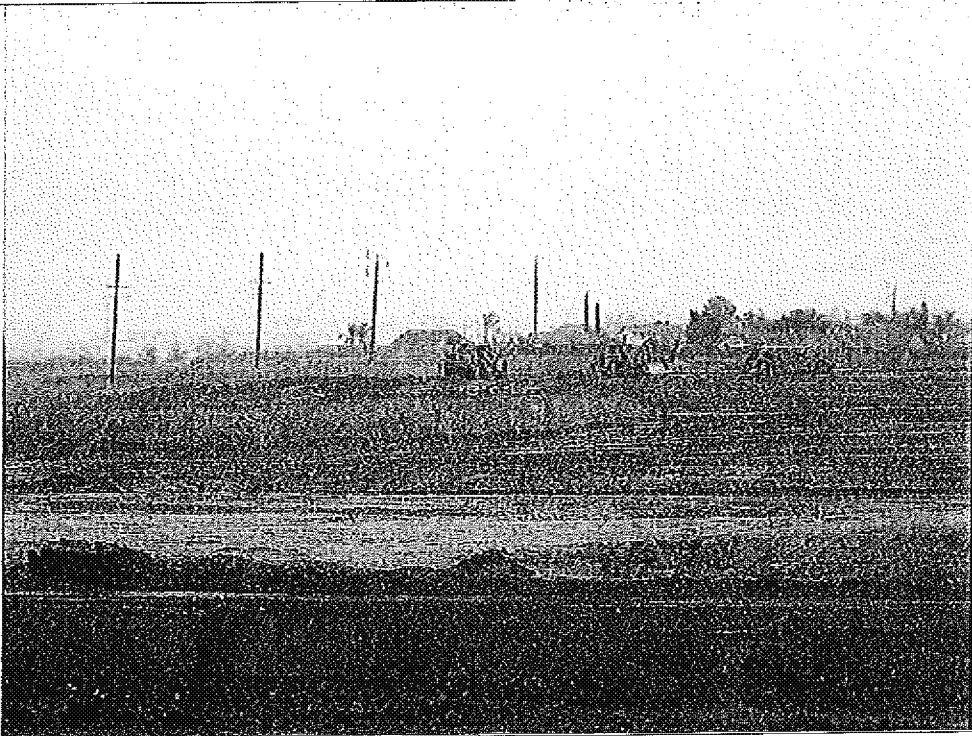
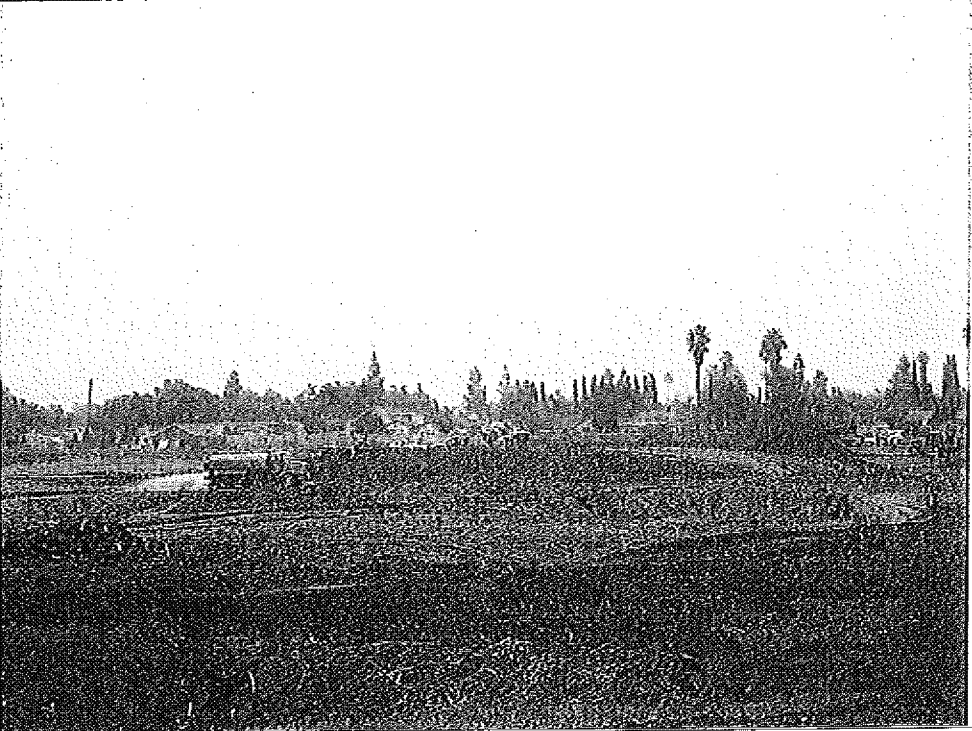
[illegible]

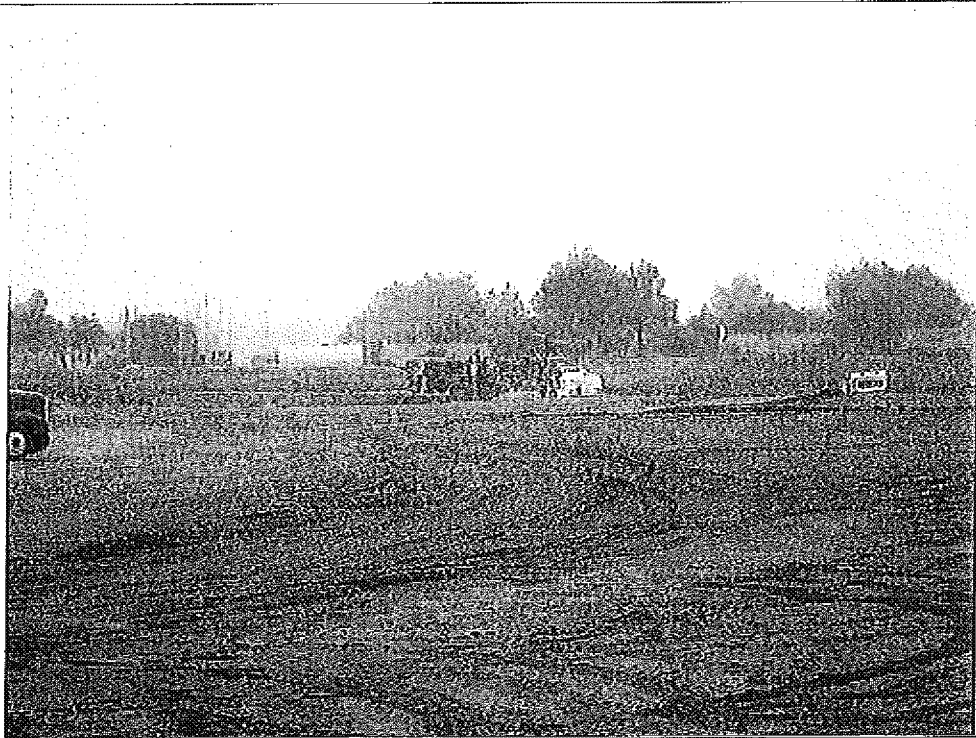

$\mu\text{g}/\text{m}^3$  = micrograms of dust per cubic meter of air  
MAAC = Maximum ambient Air Concentration of  $7 \mu\text{g}/\text{m}^3$  for dust in air.

**DUST MONITORING LOG**  
**COX PROPERTIES - AG PARK**  
**RIVERSIDE, CA**

DATE	Wind Direction	UPWIND ( $\mu\text{g}/\text{m}^3$ )			DOWNWIND ( $\mu\text{g}/\text{m}^3$ )			$\Delta$	GHIAIR
		Tag	Time	Con	Speed	Tag	Time	Con	Speed
10/23/13	S	51	0721	338.4	1.8	73	0726	152.9	1.0
	SE	51	0820	368.8	1.4	73	0825	141.9	0.9
	SE	51	0920	302.4	0.7	73	0925	115.7	1.4
	SE	51	1020	314.7	1.4	73	1025	123.8	0.5
	SE	51	1120	290.5	4.9	73	1125	130.7	4.5
	SE	51	1220	304.1	2.7	73	1225	139.3	2.4
	SE	51	1320	357.6	1.0	73	1325	162.9	2.9
	SE	51	1420	331.2	5.2	73	1425	131.0	4.3
	SE	51	1454	345.9	4.3	73	1500	154.3	5.0
10/24/13	SE	52	0725	410.4	1.1	76	0729	184.5	1.8
	SE	52	0820	374.1	1.0	76	0825	157.4	1.9
	SE	52	0920	278.4	3.4	76	0925	124.3	2.4
	SE	52	1020	277.9	3.1	76	1025	125.6	3.0
	SE	52	1120	317.5	3.3	76	1125	146.9	3.4
	SE	52	1220	329.1	1.9	76	1225	161.1	4.3
	SE	52	1320	366.2	2.5	76	1329	140.0	4.0
	SE	52	1420	367.5	2.9	76	1425	163.3	3.0
	SE	52	1455	355.6	3.3	76	1500	165.3	3.0

Department of Toxic Substances Control Site Visit Report			
<b>To:</b>	Maryam Tasnif-Abbasl	<b>Date(s) of Visit:</b>	October 24, 2013
<b>From:</b>	Greg Neal	<b>Weather:</b>	Overcast/Cold
<b>Site/Project Name:</b>	Riverside Agricultural Park		
<b>PCA/SiteCode/WR#:</b>	11019/401273-11/20015859		
<b>Purpose of Visit:</b>	Observe site conditions		
<b>Summary of Activities:</b>			
<ul style="list-style-type: none"> <li>• Observation ongoing activities at the site</li> <li>• Check nearby residential neighborhood for fugitive dust</li> </ul>			
<b>Personnel Onsite</b>		<b>Title</b>	
Mike K		Senior construction Manager/TRC	
Various earthmoving crew		B&D Construction	
<b>Field Notes/Details:</b>			
<ul style="list-style-type: none"> <li>• Arrive at project site at approximately 12:00 pm</li> <li>• Observed site from western fence line</li> <li>• Screening of central stockpile complete and soil material being hauled offsite</li> <li>• Excavation in the former Brine Pond area continues</li> <li>• Scrappers removing soil material from northernmost portion of the site</li> <li>• Concrete crushing operations are ongoing</li> <li>• Haul road for gully excavations appears complete</li> <li>• Contacted Mike K of TRC to get an update of activities</li> <li>• Anticipate that East Gully excavation will commence next week.</li> <li>• Former Brine Pond area excavation nearing completion, maybe by end of week.</li> <li>• Similar to previous visits, three water trucks operating at time of my visit</li> <li>• One hand watering at former Brine Pond excavation</li> <li>• Two water trucks working on roads, stockpiles and northern excavation</li> <li>• Wind is relatively calm and no significant dust apparent emanating from site</li> <li>• Traveled the neighborhood to assess offsite dust and all seems acceptable</li> <li>• Observed site activities from south at terminus of Keating Street prior to leaving site vicinity.</li> </ul>			
<b>Comments:</b>			
<ul style="list-style-type: none"> <li>• None</li> </ul>			
<b>Attachment(s):</b>			
<ul style="list-style-type: none"> <li>• Photo log</li> </ul>			

	
1	View of soil removal operations at northern edge of site.
	
2	View of central stockpile area showing completed soil screening activities.

	
3	View from the west side of the site showing former Brine pond area excavation activities.
	
4	View from the end of Keating Street at south end of site showing view from street level of former Brine Pond excavation activity.

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OUR FILE NO:  
04668-0001

October 18, 2004

VIA OVERNIGHT MAIL

Mr. Bruce C. Amig  
Director of Global Remediation  
B.F. Goodrich Aerospace  
Three Coliseum Centre  
2550 West Tyvola Road  
Charlotte, North Carolina 28217-3022

Re: City of Riverside -- Agricultural Park ("Ag Park")  
Potential Liability of B.F. Goodrich, Aerospace for former Rohr, Inc.  
Riverside, California Manufacturing Plant

Dear Mr. Amig:

This firm has been retained as special litigation counsel by the City of Riverside ("City") in reference to the Agricultural Park site ("Ag Park" or "Site") located at the intersection of Crest Avenue and Rutland Avenue in the City. The Site is currently owned by the City. We are writing to provide B.F. Goodrich Aerospace ("Goodrich") with notice of its potential liability as successor in interest to Rohr, Inc. ("Rohr") with respect to this Site.

Release of Chemicals on the Site

In July, 2003, the City discovered the presence of polychlorinated biphenyls ("PCBs") in soil at the Ag Park. While grading the Ag Park property, a contractor retained by a potential developer of the site, punctured a subterranean digester that had been part of the historical sewage treatment facility at the Site. The puncture caused a substantial spillage of sewer sludge into soil at the Site. The City undertook immediate measures to remove the sludge.

Since July, 2003, the City has retained environmental engineers who, under the oversight of the Riverside County Department of Environmental Health, have been actively investigating the Site. The City has now positively identified the presence of PCBs, and specifically but without limitation, the PCB known as Aroclor 1248, in high concentrations in the vicinity of the digester sludge release, as well as at other locations throughout the Site. In accordance with the

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Mr. Bruce C. Amig  
B.F. Goodrich Aerospace  
Re: City of Riverside Ag Park  
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requirements of federal and state law, the City has duly notified all necessary local and state agencies, as well as the public, and has taken steps to limit access to the Site by members of the public.

**Site History and Potential Liability of Goodrich as Successor in Interest to Rohr for Liability at the Site**

Based on the investigation and research undertaken to date, the City has concluded that Goodrich, as successor in interest to Rohr, is a major potentially responsible party ("PRP") for the PCB contamination at the Site.

The City has reached this conclusion after careful review of all the available evidence regarding the past history of the Site to determine how PCBs came to be disposed of in the sewage treatment system. This research has entailed: (1) reviewing historic aerial photographs; (2) reviewing City and County of Riverside records relating to the activities, permits and customers of the prior sewage treatment plant; (3) reviewing records from the Santa Ana Regional Water Quality Control Board regarding industrial activities in the vicinity of the Site, including activities of Rohr; (4) conducting a comprehensive EDR search; and (5) obtaining through the Freedom of Information Act ("FOIA") records from the U.S. Army regarding the former Army activities on the Site.

The Ag Park Site was formerly part of Camp Anza, a World War II-era staging ground for Army troops. Sometime during World War II, the U.S. Army constructed and operated a sewage treatment plant ("Plant") on the Site. Following the end of World War II, ownership of the Plant was taken over by several now-defunct community district organizations and the service area for the Plant expanded to include Rohr as an industrial user and commercial and residential customers located in the vicinity of the Site. The City took over ownership of the Site in 1962 and closed the plant in 1965.

Our research has disclosed that in 1952, Rohr purchased a separate 80-acre portion of former Camp Anza ("Rohr Site"). Rohr, and Goodrich as recent successor in interest, has used the Rohr Site for its aircraft component manufacturing operations since that time. Based on our present investigation, the City has established that Rohr was the major industrial customer of the sewage treatment plant from 1952 to 1965 and contracted with the operators of the Plant for the acceptance of Rohr's sewage from the Rohr Site. Historical records of the Plant do not disclose any Plant industrial customer other than Rohr that used PCBs. The other customers of the Plant were commercial and residential users within the boundaries of the Plant service area.

Rohr regularly used materials containing PCBs in its past operations at the Rohr Site. Specifically, there are public records which document that: (1) Rohr historically used the PCB

Mr. Bruce C. Amig  
B.F. Goodrich Aerospace  
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known as Aroclor 1248 in its Rohr Site operations; (2) Rohr has been cited by the Santa Ana Regional Water Quality Control Board for PCB contamination including Aroclor 1248 in soil and in underground utility and other pipelines located on its Rohr Site property and in groundwater impacted by the Rohr Site; (3) Rohr periodically flushed out PCBs including Aroclor 1248 from its autoclave systems on site and disposed of it on the Rohr Site. Indeed, Rohr has expressly admitted its past use of Aroclor 1248 in its Rohr Site operations.

It appears that Rohr is the major, or only, source of the PCBs which have now been discovered at the Ag Park. The historic operations of the Plant from 1952 through 1965 followed accepted practices of wastewater treatment using digesters and then spreading the treated sludge onto various areas of the Ag Park in specifically defined drying beds throughout the Site. No operator of the Plant had knowledge that Rohr's waste contained PCBs.

The City has concluded that the PCBs used in Rohr's manufacturing operations are the source of not only the PCBs discovered in the digester from the accidental release in July 2003, but also of the PCBs which have been identified throughout the Ag Park Site, particularly in the areas of the sludge drying ponds. Based on Rohr's contractual relationship with the owners and operators of the Plant, its admission of the use of Aroclor 1248 in its manufacturing process during the subject time period, the discovery of the Aroclor 1248 in the soil and groundwater at the Rohr Site, as well as standard industrial disposal practices during the era for autoclaves and spent oil, the City believes that Rohr is the major or only source of the PCBs found at the Riverside Ag Park site. Therefore, Rohr's historic disposal activities are a proximate cause of the City's recently incurred costs of remedial investigation and of costs to be incurred in the future for remediation as set forth below.

#### Notice to Goodrich as Successor to Rohr of Potential Liability Under CERCLA

The City has undertaken a complete Site investigation and characterization to identify the extent of the plume of PCB contamination in soil. The City has incurred and will continue to incur substantial response costs, including but not limited to: (1) hiring environmental engineers to work with the County of Riverside to sample throughout the Site at various depths for presence of not only PCBs, but also other chemicals which could have been disposed by Rohr in the sewer systems; (2) obtaining laboratory testing results for the sampling; (3) retaining various subcontractors to dismantle the remainder of the concrete from the digester and other structures contaminated with PCBs in order to sample soil beneath these structures; (4) retaining contractors to remove, transport and dispose of PCB contaminated soils and other materials; and (5) retaining legal counsel to pursue potentially responsible parties.

The City is committed to remediation of the Site, and is working cooperatively with the County of Riverside who has been designated by the California Environmental Protection

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Agency Department of Toxic Substances Control as the Lead Agency to oversee this process. The City will be seeking to recover its costs from PRPs, as defined in 42 U.S.C. 9607 (a), through the mechanisms afforded under Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA") for cost recovery and/or contribution.<sup>1</sup> To establish liability under CERCLA, four elements are needed, all of which are met with respect to Goodrich: (1) the site upon which hazardous substances are contained is a "facility;" (2) a release or threatened release of any hazardous substances from the facility has occurred; (3) such release or threatened release has caused the claimant to incur response costs that were necessary; and (4) the potentially responsible party is one of the four classes of person subject to CERCLA liability – namely, present owner or operator, past owner or operator, arranger of hazardous waste disposal and transporters of such waste.<sup>2</sup>

The evidence and investigation to date establish that: (1) the Ag Park is a facility; (2) the PCBs are a hazardous substance which has been released; (3) the City has in the past, and continues to incur response costs that are necessary; and (4) Goodrich is a potentially responsible party as the successor in interest to Rohr, who was an arranger of hazardous waste disposal and therefore subject to CERCLA generator liability.

The Site investigation process will shortly culminate in the preparation of a Remedial Action Plan ("RAP"), pursuant to Health & Safety Code §§ 25350, *et seq.*, the purpose of which will be to set forth a comprehensive remediation plan for the removal of PCBs and other chemicals to appropriate levels to ensure the health and safety of the public and to enable future development of the Site. The RAP will comply with all applicable state and federal laws and regulations, including the National Contingency Plan ("NCP").<sup>3</sup> As a part of the RAP process, the City seeks to identify any person affected by the remediation action and provide the opportunity to participate in the final RAP. Parties such as Goodrich that contributed to the hazardous waste at the Site will be given the opportunity to participate in the remediation action or to waive that right.

Accordingly, the City hereby provides notice that Goodrich is considered to be the primary PRP<sup>4</sup> under the CERCLA,<sup>5</sup> and the City hereby gives notice to Goodrich pursuant to

<sup>1</sup> 42 U.S.C. § 9607(a) and 42 U.S.C. 9613(f).

<sup>2</sup> 42 U.S.C. §§ 9607(a)(1)-(4); *Carson Harbor Village Ltd. v. Unocal Corp.*, 270 F.3d 863, 872 (9<sup>th</sup> Cir. 2001); *W. Props. Serv. Corp. v. Shell Oil Co.*, 358 F.3d 678 (9<sup>th</sup> Cir. 2004).

<sup>3</sup> National Contingency Plan, 40 C.F.R. 300, *et seq.*

<sup>4</sup> 42 U.S.C. 9607(a).

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Mr. Bruce C. Amig  
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Re: City of Riverside Ag Park  
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Page 5

Health & Safety Code § 25356.1 to request that Goodrich participate in the RAP process for purposes of determining allocation of responsibility. While the use of PCBs for most uses was not outlawed until 1979, courts have uniformly held that CERCLA liability extends to acts committed before the enactment of CERCLA in 1980.<sup>6</sup> Furthermore, Goodrich may also be liable under a theory of continuing trespass and continuing nuisance, as well as other common law and statutory torts.

The City requests a meeting with you and other authorized representatives of Goodrich as soon as possible to discuss reaching an amicable resolution of responsibility and duties for the investigation and remediation of the Site, allocation of financial responsibilities for past and future costs, and the appropriateness of a tolling agreement for purposes of staying any applicable statutes of limitations for filing litigation in this matter. At such a meeting, the City will share with Goodrich the results of the Site investigation to date, the current plans for Site remediation, and will provide whatever other information Goodrich seeks in order to partner with the City in the resolution of the Ag Park contamination.

Please contact me within two weeks of the date of this letter so that we may set up a mutually convenient meeting. We look forward to discussing this matter with you at your earliest convenience.

Very truly yours,

BURKE, WILLIAMS & SORENSEN, LLP



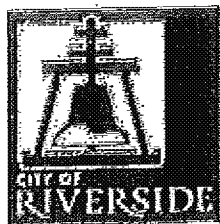
Deborah C. Prosser

cc: Thomas P. Evans, Interim City Manager  
Michael J. Beck, Assistant City Manager  
Greg Priamos, Esq., City Attorney  
Eileen M. Teichert, Esq., Assistant City Attorney  
Siobhan Foster, Administrative Services Manager

(..continued)

<sup>5</sup> 42 U.S.C. 9601, *et seq.*

<sup>6</sup> *See, United States v. Northeastern Pharmaceutical* (8<sup>th</sup> Cir. 1986), 810 F.2d 726, 732-737, *cert denied*, 484 U.S. 848.



## City Council Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

DATE: April 7, 2009

FROM: PUBLIC WORKS DEPARTMENT

ITEM NO: 47

WARD: 7

SUBJECT: FIRST AMENDMENT TO SETTLEMENT, RELEASE AND INDEMNIFICATION AGREEMENT AND FIRST AMENDMENT TO ON-SITE ESCROW AGREEMENT WITH ROHR, INC. TO ADDRESS ENVIRONMENTAL CONDITIONS AT AGRICULTURAL PARK

### ISSUE:

The issue for City Council consideration is approval of the First Amendment to the Settlement, Release, and Indemnification Agreement and the First Amendment to the On-Site Escrow Agreement with Rohr Inc. The City Council approved the Agreements on April 11, 2006 to further the City of Riverside's efforts to address environmental conditions on and off the Agricultural Park site. The First Amendments would extend the term of the Agreements by five (5) years through April 11, 2014.

### RECOMMENDATIONS:

That the City Council:

1. Approve the First Amendment to the Settlement, Release, and Indemnification Agreement and the First Amendment to the On-Site Escrow Agreement with Rohr Inc; and
2. Authorize the City Manager, or his designee, to execute the Amendments and any and all documents necessary to comply with the terms of the Amendments.

### BACKGROUND:

The Agricultural Park (Ag Park), formerly owned by the City and transferred to the Friends of Riverside Airport (FRA) by City Council action on April 8, 2003, contained a sewage treatment plant (Alanza Treatment Plant) operated by various entities from approximately 1942 to 1965. In July 2003, the City discovered the presence of polychlorinated biphenyls (PCBs) in the abandoned treatment plant facilities, debris and soils on and around the Ag Park site. The City characterized the area in and around the site for PCBs.

FRA is contractually obligated to remediate the site under the oversight of the California Environmental Protection Agency Department of Toxic Control Substances (DTSC). The City is working with DTSC to determine if there are any offsite matters requiring remediation.

The City conducted an investigation to identify potentially responsible parties for the presence of PCBs on and around the Ag Park. The intent of the investigation was to obtain evidence that would assist the City in holding potentially responsible parties liable for their share of the PCB remediation costs and other damages. Under the Comprehensive Environmental Responsibility and Reimbursement Liability Act of 1980, as amended CERCLA, and other applicable federal and state laws, Riverside is entitled to obtain reimbursement and damages for the cost of PCB remediation from potentially responsible parties.

During the investigation, it became known to the City that Rohr Inc. used PCBs at its site during the time the sewer plant was in operation. Although Rohr has declared it is not responsible for the PCBs now at the Ag Park, the City and Rohr entered into a Settlement, Release, and Indemnification Agreement (Agreement) for the purpose of settling potential claims, demands, and causes of action (administrative, judicial, or otherwise) between them with respect to the site and PCB contamination migrating from the site to off-site and in order to avoid the expense, uncertainty, and delay of litigation. The key provisions of the Agreement are contained in Table 1. The Agreement was approved by the City Council on April 11, 2006. The City and Rohr also entered into an On-Site Escrow Agreement for Rohr to deposit their share of the clean up costs in an escrow account.

The timing for performance under the Agreement complemented the First Amendment to the Exchange, Disposition and Development Agreement (Development Agreement) between the City, FRA, Van Buren Golf Center, LLC, and Riverside Gateway Plaza, LLC, approved by the City Council on April 11, 2006. The First Amendment required FRA, with DTSC oversight to remediate the Ag Parcel within three (3) years of the First Amendment effective date. The failure of FRA to complete remediation of the site and provide a NFA letter within three (3) years of the Agreement execution date (April 11, 2006) constituted grounds for termination of the On-Site provisions of the Agreement including the return of funds in the escrow account to Rohr.

Due to the litigation filed against the Development Agreement and tract maps associated therewith, FRA was delayed by approximately twenty (20) months in performing the remediation of the Ag Park. On September 10, 2008, FRA re-affirmed its commitment to cleanup the Ag Park through a two-phased process. In connection with the phased cleanup of the Ag Park, a Second Amendment to the Development Agreement was approved by the City Council on February 17, 2009.

Due to the delay in FRA's clean up of the Ag Park caused by the lawsuit, and given the fact that FRA is moving ahead with site remediation in accordance with the Second Amendment to the Development Agreement, the City and Rohr propose to amend the Agreement and the Escrow Agreement to also extend their terms. It is in the City's best interest to amend the Agreement and the Escrow Agreement with Rohr to reflect the new remediation time frames. The proposed First Amendments would extend the term of the Agreement and On-Site Escrow Agreement by five (5) years through April 11, 2014.

### FISCAL IMPACT:

The First Amendment to the Settlement, Release, and Indemnification Agreement extends the term of the agreement to April 11, 2014. The fiscal impact of the First Amendment to the Settlement Agreement depends on several variables, notably the ability of the FRA to clean the site to a level acceptable for the issuance of an On-Site No Further Action Letter by DTSC and the extent of off-site remediation required by DTSC, if any, and its associated cost, ultimately culminating in the issuance of an Off-Site No Further Action Letter.

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Under the anticipated scenario, FRA would comply with the terms of the Second Amendment to the Exchange, Disposition and Development Agreement including removal of TSCA material by June 30, 2009; receipt of DTSC certification of Phase 1 work by September 30, 2009; and completion of Phase 2 work by June 30, 2012 to a level satisfactory to DTSC. If this occurs, Rohr would release \$1.5 million from escrow to the City of Riverside upon issuance of an On-Site No Further Action Letter. This funding would cover the estimated \$1.5 million dollars spent by the City from July 2003 to present on initial cleanup, site characterization, investigation, DTSC oversight and related activities.

In terms of off-site remediation, the belief at this point is that minimal cleanup would be required by DTSC, if any, and the funding of up to \$3.0 million contributed equally by Rohr and the City under the terms of the Agreement would not be expended. If off-site clean up costs are higher than \$3.0 million, the off-site provision of the Agreement would terminate and the City would retain the ability to make any claims regarding future costs for off-site remediation from responsible third parties. The Agreement also provides for a \$150,000 contribution by Rohr toward the purchase of a joint City/Rohr Pollution Legal Liability (PLL) insurance policy for both on and off-site matters or a \$150,000 contribution toward the City's purchase of its own PLL insurance.

Prepared by:	Slobhan Foster, Public Works Director
Certified as to	
availability of funds:	Paul C. Sundeen, Assistant City Manager/CFO/Treasurer
Approved by:	Belinda J. Graham, Assistant City Manager for Bradley J. Hudson, City Manager
Approved as to form:	Gregory P. Priamos, City Attorney

Attachments:

1. Summary of Key Provisions
2. First Amendment to the Settlement, Release, and Indemnification Agreement and the First Amendment to the On-Site Escrow Agreement with Rohr Inc.



Table 1

## Settlement, Release, and Indemnification Agreement—Summary of Key Provisions.

Section, Title, Page	Description
Payment to City: On-Site Remediation Section 3.1, pp. 4-5	<ul style="list-style-type: none"> <li>o Within 10 calendar days of Agreement execution, Rohr must place \$1.5 million into On-Site Escrow account.</li> <li>o Upon issuance of On-Site No Further Action Letter from DTSC, Rohr must release funds held in escrow to City.</li> <li>o Should Developer fail to cleanup the site or DTSC fail to issue No Further Action Letter within 3 years of Agreement execution, funds held in escrow would be returned to Rohr &amp; provisions of Agreement pertaining to On-Site terminated.</li> </ul>
Payment to City: Off-Site Remediation Section 4, pp. 5-7	<ul style="list-style-type: none"> <li>o Rohr would share costs of Off-Site remediation on a 50/50 basis up to a total amount of \$3 million with City &amp; Rohr each contributing up to \$1.5 million.</li> <li>o Within 10 calendar days of regulatory agency approval of Off-Site Remedial Action Plan (RAP), Rohr must place 50% of estimated cleanup costs into Off-Site Escrow account &amp; make payments to City upon presentation of invoices for internal &amp; external costs.</li> <li>o Internal costs would be limited to \$125,000.</li> <li>o Upon issuance of Off-Site No Further Action Letter from DTSC, any remaining funds held in escrow would be returned to Rohr.</li> </ul>
Limit to Off-Site Costs Section 4.6, p. 7	<ul style="list-style-type: none"> <li>o Rohr's obligation to pay ongoing costs of Off-Site remediation &amp; Rohr's contribution to Off-Site escrow would not exceed \$1.5 million.</li> <li>o If cost to complete Off-Site remediation exceeds \$3.0 million, provisions of the Agreement pertaining to the Off-Site would be terminated unless the parties agree in writing to modify the Agreement.</li> <li>o At point of termination, each party would reserve all rights &amp; retain ability to make any claims or pursue any negotiations regarding future costs for further Off-Site remediation.</li> <li>o After expenditure of \$3.0 million, both parties would release each other from any claim for &amp; waive right to recover any of costs already expended for Off-Site remediation before termination of Agreement.</li> </ul>
Waste Manifests Section 5.3, p. 8 & Section 6.3, p. 9	<ul style="list-style-type: none"> <li>o Rohr would not be listed on any manifests regarding wastes removed from On-Site or Off-Site.</li> <li>o Rohr would not be deemed the "generator" of any materials removed from On-Site or Off-Site.</li> </ul>



Section, Title, Page	Description
Release of Claims by City On-Site Section 7, pp. 9-10	<ul style="list-style-type: none"> <li>Upon City's receipt of On-Site No Further Action Letter from DTSC &amp; City's receipt of \$1.5 million from On-Site escrow account, City would forever &amp; completely release &amp; discharge Rohr from all claims or any other liability whatsoever including but not limited to all environmental liabilities &amp; consequential costs in any way related to release of hazardous materials On-Site whether known or unknown.</li> <li>Release would not extend to category of claims relating to On-Site—Toxic tort, personal injury or property damage claims brought by persons other than City or Developer &amp; claims for natural resource damage.</li> <li>Should the provisions of the Agreement concerning On-Site be terminated, City would reserve whatever legal rights &amp; claims it may have against Rohr &amp; other parties.</li> </ul>
Release of Claims by City Off-Site Section 8, p. 10	<ul style="list-style-type: none"> <li>Upon City's receipt of Off-Site No Further Action Letter from DTSC, City would forever &amp; completely release and discharge Rohr from all claims including but not limited to environmental liabilities &amp; consequential costs in any way related to hazardous materials released at &amp; migrating from Site to Off-Site locations identified in the Off-Site RAP whether known or unknown.</li> <li>Release would not extend to category of claims relating to Off-Site—Toxic tort, personal injury or property damage claims brought by persons other than City or Developer &amp; claims for natural resource damage.</li> <li>Should the provisions of Agreement concerning Off-Site be terminated, City would reserve whatever legal rights &amp; claims it may have against Rohr &amp; other parties.</li> </ul>
Release of Claims by Developer Section 9, pp. 10-11	<ul style="list-style-type: none"> <li>Within 60 days of execution of Agreement, City must cause Developer to execute written release of claims in favor of Rohr.</li> <li>Should City fail to perform this covenant, Rohr may terminate Agreement.</li> </ul>
On-Site Indemnification & Financial Assurance Section 10, p. 11	<ul style="list-style-type: none"> <li>Except for claims not released in Agreement &amp; effective upon the City's receipt of On-Site No Further Action Letter, City would indemnify, defend &amp; hold harmless Rohr from all liabilities related to hazardous materials found On-Site.</li> <li>City must also require Developer to post performance bond or similar financial assurance to ensure completion of site mediation.</li> </ul>

Section, Title, Page	Description
Environmental Insurance Section 14, pp. 11-12	<ul style="list-style-type: none"> <li>b. Parties would make reasonable efforts to obtain Pollution Legal Liability (PLL) Insurance for Site &amp; Off-Site with Rohr taking lead</li> <li>c. Rohr must investigate 2 options for PLL insurance—single policy naming both City &amp; Rohr as insured and 2 PLL insurance policies that separately provide coverage for Rohr &amp; City</li> <li>d. Each party retains right to elect whether to obtain joint or separate coverage</li> <li>e. If parties agree to purchase joint PLL insurance policy, Rohr would pay first \$150,000 of one-time premium with 50/50 split of remaining cost of premium</li> <li>f. If parties agree not to purchase joint PLL insurance, City elects to purchase own PLL insurance, Rohr must contribute \$150,000 toward cost of City's one-time premium</li> </ul>
No Admission of Liability Section 15	<ul style="list-style-type: none"> <li>b. Parties make no admissions of fact or law</li> <li>c. Intent of parties that Agreement not establish or be used by either party or any third parties as precedent or admission of liability</li> </ul>

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## FIRST AMENDMENT AND EXTENSION OF SETTLEMENT, RELEASE, AND INDEMNIFICATION AGREEMENT

This First Amendment and Extension of Settlement, Release, and Indemnification Agreement ("Amendment") is entered into on this 22 day of April, 2009, by and among Rohr, Inc., a Delaware Corporation ("Rohr"), and the City of Riverside, California (the "City"). The City and Rohr are referred to as "the Parties." The Parties make this Amendment to the Settlement, Release, and Indemnification Agreement entered into by the Parties on April 11, 2006 (the "Agreement").

### RECITALS

- A. The Parties entered into the Agreement on April 11, 2006.
- B. The Agreement provides for a three year time period starting April 11, 2006 at the end of which the On-Site escrow funds would be disbursed automatically to Rohr.
- C. The three year time period will end on April 11, 2009.
- D. The Agreement provides that the Parties may agree to extensions of the three year time period, provided that the extensions are in writing signed by both Parties, and that the On-Site Escrow agreement is amended in writing accordingly.
- E. The Parties wish to extend the three year period for an additional five years, so that it will end on April 11, 2014, allowing additional time for remediation of the On-Site.
- F. The Agreement also provides that the Parties shall use commercially reasonable efforts to obtain PLL Insurance for the On-Site and the Off-Site.
- G. Following execution of the Agreement in 2006, the Parties mutually agreed to defer obtaining PLL Insurance, and have not yet obtained such insurance.
- H. The Parties wish to amend the provision relating to PLL Insurance such that the Parties are not required to obtain such PLL Insurance, but may elect to do so.

### AGREEMENT

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the Parties hereby agree as follows:

1. **Incorporation of Recitals.** The Parties incorporate into this Amendment the recitals set forth above as part of the terms of the Agreement. The recitals are "recitals" within the meaning of Evidence Code § 622.
2. **Extension of Time.** All references to a three year period in the Agreement are deemed to read and to be references to an eight year period starting April 11, 2006.

3. **Additional Five Years for Cleanup.** In particular, but not exclusively, the references to a three year period contained in paragraphs 3.1.3 (Section 3. Payment to City; On-Site Remediation), 3.1.4 (same), and 25.2 (Section 25. Modification and Termination) are deemed to read and to be references to an eight year period ending on April 11, 2014.
4. **On-Site Escrow.** The Parties agree to amend in writing the On-Site Escrow agreement set forth in Exhibit B of the original Agreement such that all references to the three year period in the On-Site Escrow agreement are deemed to read and to be references to an eight year period ending on April 11, 2014.
5. **PLL Insurance.** Paragraph 11.1 is amended to read:  
  
The Parties may elect to investigate the availability of PLL Insurance for the On-Site and the Off-Site. In the event they elect to do so, Rohr shall take the lead in investigating the availability, terms and pricing of PLL Insurance. The City shall cooperate by making available documents, reports and other information requested by PLL Insurance carriers in order to obtain quotes on premiums for PLL Insurance. The City shall not independently contact a broker to investigate PLL Insurance, but shall coordinate with Rohr and the broker selected by Rohr.
6. **Savings Clause.** All other provisions of the Agreement remain in full force and effect except as modified herein. Capitalized terms in this Amendment have the same meanings given to them in the original Agreement.
7. **Authority to Execute.** The Parties warrant and represent that each of the persons executing this Amendment on behalf of a legal entity (i) has been authorized to do so by the entity on whose behalf it is being signed, and (ii) has the authority to bind the signatory Party for what he or she is signing to the performance of its obligations under this Amendment and the Agreement.

IN WITNESS WHEREOF this Amendment has been executed by the Parties on the day and year indicated below.

Dated: \_\_\_\_\_

The City of Riverside

By: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

Dated: 3/20/2009

Rohr, Inc.

By: [Signature]

Print Name: Mark D. Smith

Title: V.P. / Gen. Mgr.

[Signature]  
LA 334345.6  
CA 02-191813

## FIRST AMENDMENT TO ON-SITE ESCROW AGREEMENT

This First Amendment to On-Site Escrow Agreement (the "Amendment to Escrow Agreement") is entered into as of March 20, 2009, by and among Rohr, Inc., a Delaware corporation ("Rohr"), the City of Riverside, California (the "City"), and Chicago Title Company ("Escrow Holder") (collectively, "the Parties"). This Amendment to Escrow Agreement is made to extend the On-Site Escrow Agreement dated April 11, 2006 ("Escrow Agreement"), related to the On-Site Escrow described therein, escrow account no. 57009687, for a period of five years.

The Parties agree as follows:

1. Section 3(b) of the Escrow Agreement, titled Outside Termination Date is hereby amended and replaced with the following provision:

(b) Outside Termination Date. Notwithstanding Section 3(a) above, if the City has not obtained and provided to Escrow Holder and Rohr the On-Site No Further Action Letter in accordance with Section 3 of the Settlement Agreement on or before the date that is the eighth (8th) anniversary of the Effective Date, which anniversary is April 11, 2014, then this Agreement shall terminate and Escrow Holder shall promptly return the funds, together with any interest earned on the funds, from the On-Site Escrow to Rohr, by wire transfer of federal funds to a wire transfer address designated by Rohr. Escrow Holder shall be empowered to rely on this Section 3(b) without any further instruction, authorization or consent from either Rohr or the City and despite unilateral directions to the contrary from either Rohr or the City, unless the Escrow Holder receives a written amendment to this Agreement signed by both Rohr and the City extending the termination date.

2. All other provisions of the Escrow Agreement remain in full force and effect except as modified above.

The parties have executed this Agreement as of March 20, 2009.

ESCROW HOLDER:

Chicago Title Company

By: 

Its: Sandra Olson

City of Riverside:

By: \_\_\_\_\_

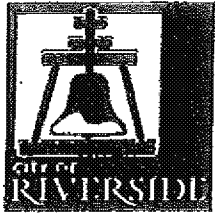
Its: \_\_\_\_\_

ROHR:

Rohr, Inc.,  
a Delaware corporation

By: 

Its: M. D. Dell



## City Council Memorandum

As Given to Andy M.  
① of 3  
Kund

**TO:** HONORABLE MAYOR AND CITY COUNCIL **DATE:** April 11, 2006  
**FROM:** PUBLIC WORKS DEPARTMENT **ITEM NO:** 38  
**WARD:** 7  
**SUBJECT:** SETTLEMENT, RELEASE AND INDEMNIFICATION AGREEMENT WITH ROHR, INC. TO ADDRESS ENVIRONMENTAL CONDITIONS AT AGRICULTURAL PARK

### ISSUE:

The issue for City Council consideration is approval of the Settlement, Release, and Indemnification Agreement with Rohr Inc. The Agreement would settle past differences and further the City of Riverside's efforts to address environmental conditions on and off the Agricultural Park site. The Agreement is also a means to avoid the expense, uncertainty, and delay of litigation. The Agreement is not an admission of liability by any party.

### RECOMMENDATIONS:

That the City Council:

1. Approve the Settlement, Release, and Indemnification Agreement with Rohr Inc. and authorize the City Manager to execute the Agreement upon receipt and approval by City Attorney's Office of the On-Site and Off-Site Escrow Agreements, and any other documents necessary to comply with the terms of the Agreement.

### BACKGROUND:

The City owns 59.53 acres of real property, known as the Agricultural Park, now within City boundaries on which a sewage treatment plant (Arlanza Treatment Plant) was located and operated by various entities from approximately 1942 to 1965. In July 2003, the City discovered the presence of polychlorinated biphenyls (PCBs) in the abandoned treatment plant facilities, debris and soils on and around the Agricultural Park site. The City has completed its characterization of the area in and around the site for PCBs and intends to remediate the site under the oversight of the California Environmental Protection Agency (Cal EPA) Department of Toxic Control Substances (DTSC).

The City is conducting an ongoing investigation to identify potentially responsible parties for the presence of PCBs on and around the Agricultural Park site. The intent of the investigation is to obtain evidence that would assist the City in holding the potentially responsible parties liable for their share of the PCB remediation costs and other damages. Under the Comprehensive Environmental Responsibility and Reimbursement Liability Act of 1980, as amended CERCLA, and

other applicable federal and state laws, Riverside is entitled to obtain reimbursement and damages for the cost of PCB remediation from potentially responsible parties.

The most notable avenue the City is pursuing is obtainment of records and other evidence from Monsanto Company and its successor entities regarding the sales, marketing, distribution, purchase, use disposal or spread of PCBs in and around the City between 1942 and 1965. On April 12, 2005, the City Council adopted a resolution authorizing the issuance of legislative subpoenas by the City to Monsanto Company to compel the production of records and other evidence relevant to identification of potentially responsible parties. Monsanto Company was the sole manufacturer of PCBs during the relevant period of 1942 to 1965 when the Arlanza Treatment Plant was operational. Documents from Monsanto have been received and are being reviewed by the City Attorney's Office.

During the City's investigation, it became known to the City that Rohr Inc. used PCBs at their site during the time the sewer plant was in operation. Although Rohr has declared that they are not responsible for the PCBs now at the Agricultural Park, Rohr expressed interest in working with the City to restore the Agricultural Park to productive use and address any off-site PCBs issues. This common motivation fostered the development of the Settlement, Release, and Indemnification Agreement.

The parties intend to enter into this Agreement for the purpose of settling potential claims, demands, and causes of action (administrative, judicial, or otherwise) between them with respect to the site and PCB contamination migrating from the site to off-site and avoid the expense, uncertainty, and delay of litigation. The Agreement is further intended to complement the First Amendment to the Exchange, Disposition and Development Agreement (Development Agreement) between the City, Friends of Riverside Airport, (Developer) LLC, Van Buren Golf Center, LLC, and Riverside Gateway Plaza, LLC, also being considered by the City Council.

The key provisions of the Agreement are contained in Table 1.

#### **FISCAL IMPACT:**

The fiscal impact of the Settlement, Release, and Indemnification Agreement to the City of Riverside depends on several variables, notably the ability of the Developer to clean the site to a level acceptable for the issuance of an On-Site No Further Action Letter by DTSC and the extent of off-site remediation required by DTSC, if any, and its associated cost, ultimately culminating in the issuance of an Off-Site No Further Action Letter.

Under the anticipated scenario, the Developer would comply with the terms of the First Amendment to the Exchange, Disposition and Development Agreement (Development Agreement) and clean the site to a level satisfactory to DTSC within three years of the execution of the Development Agreement and this Agreement. If that occurs, Rohr would release \$1.5 million from escrow to the City of Riverside upon issuance of an On-Site No Further Action Letter. This funding would cover the estimated \$1.5 million dollars spent by the City from July 2003 to present on Initial cleanup, site characterization, investigation, DTSC oversight and related activities.

In terms of off-site remediation, the belief at this point is that minimal cleanup would be required by DTSC, if any, and the funding of up to \$3.0 million contributed equally by Rohr and the City under the terms of the Agreement would not be expended. The Agreement also provides for a \$150,000 contribution by Rohr toward the purchase of a joint City/Rohr Pollution Legal Liability (PLL) insurance policy for both on and off-site matters or a \$150,000 contribution toward the City's purchase of its own PLL insurance.

There is financial risk associated with entering into the Agreement, markedly the indemnification of Rohr from environmental liabilities related to hazardous materials found on-site and the release of Rohr from claims involving potential environmental liabilities and consequential claims for releases of hazardous materials on-site and migrating from the site to off-site locations. This release would not extend to claims relating to on and off-site toxic tort, personal injury or property damage claims brought by persons other than City or Developer.

The City would offset this exposure by the indemnification tendered by Chemical Waste Management Inc. and Waste Management Inc. as part of the Development Agreement as well as PLL insurance for on-site and on-site/off-site matters offered by the Development Agreement and the Agreement, respectively. Further, if off-site clean up costs are higher than \$3.0 million, the off-site provision of the Agreement would terminate and the City would retain the ability to make any claims regarding future costs for off-site remediation from responsible third parties.

### ALTERNATIVES:

Several options are available to the City Council. The City Council may elect to:

1. Deny approval of the Settlement, Release, and Indemnification Agreement;
2. Approve the Settlement, Release, and Indemnification Agreement with modifications; and/or
3. Refer the First Settlement, Release, and Indemnification Agreement to a City Council Subcommittee for review and report back to the City Council.

Prepared by: Siobhan Foster, Public Works Director  
Approved by: Michael J. Beck, Assistant City Manager  
For Bradley J. Hudson, City Manager  
Approved as to form: Gregory P. Priamos, City Attorney

### Attachments:

1. Settlement, Release, and Indemnification Agreement with Rohr Inc.
2. Table 1



**Table 1**

**Settlement, Release, and Indemnification Agreement—Summary of Key Provisions**

Section, Title, Page	Description
Payment to City: On-Site Remediation Section 3.1, pp. 4 - 5	<ul style="list-style-type: none"> <li>Within 10 calendar days of Agreement execution, Rohr must place \$1.5 million into On-Site Escrow account</li> <li>Upon issuance of On-Site No Further Action Letter from DTSC, Rohr must release funds held in escrow to City</li> <li>Should Developer fail to cleanup the site or DTSC fail to issue No Further Action Letter within 3 years of Agreement execution, funds held in escrow would be returned to Rohr &amp; provisions of Agreement pertaining to On-Site terminated</li> </ul>
Payment to City: Off-Site Remediation Section 4, pp. 5 - 7	<ul style="list-style-type: none"> <li>Rohr would share costs of Off-Site remediation on a 50/50 basis up to a total amount of \$3 million with City &amp; Rohr each contributing up to \$1.5 million</li> <li>Within 10 calendar days of regulatory agency approval of Off-Site Remedial Action Plan (RAP), Rohr must place 50% of estimated cleanup costs into Off-Site Escrow account &amp; make payments to City upon presentation of invoices for internal &amp; external costs.</li> <li>Internal costs would be limited to \$125,000</li> <li>Upon issuance of Off-Site No Further Action Letter from DTSC, any remaining funds held in escrow would be returned to Rohr</li> </ul>
Limit to Off-Site Costs Section 4.6, p. 7	<ul style="list-style-type: none"> <li>Rohr's obligation to pay ongoing costs of Off-Site remediation &amp; Rohr's contribution to Off-Site escrow would not exceed \$1.5 million</li> <li>If cost to complete Off-Site remediation exceeds \$3.0 million, provisions of the Agreement pertaining to the Off-Site would be terminated unless the parties agree in writing to modify the Agreement</li> <li>At point of termination, each party would reserve all rights &amp; retain ability to make any claims or pursue any negotiations regarding future costs for further Off-Site remediation</li> <li>After expenditure of \$3.0 million, both parties would release each other from any claim for &amp; waive right to recover any of costs already expended for Off-Site remediation before termination of Agreement</li> </ul>
Waste Manifests Section 5.3, p. 8 & Section 6.3, p. 9	<ul style="list-style-type: none"> <li>Rohr would not be listed on any manifests regarding wastes removed from On-Site or Off-Site</li> <li>Rohr would not be deemed the "generator" of any materials removed from On-Site or Off-Site</li> </ul>

**Section, Title, Page Description**

Release of Claims by City On-Site Section 7, pp. 9 - 10	<ul style="list-style-type: none"> <li>o Upon City's receipt of On-Site No Further Action Letter from DTSC &amp; City's receipt of \$1.5 million from On-Site escrow account, City would forever &amp; completely release &amp; discharge Rohr from all claims or any other liability whatsoever including but not limited all environmental liabilities &amp; consequential costs in any way related to release of hazardous materials On-Site whether known or unknown</li> <li>o Release would not extend to category of claims relating to On-Site—toxic tort, personal injury or property damage claims brought by persons other than City or Developer &amp; claims for natural resource damage</li> <li>o Should the provisions of the Agreement concerning On-Site be terminated, City would reserve whatever legal rights &amp; claims it may have against Rohr &amp; other parties</li> </ul>
Release of Claims by City Off-Site Section 8, p. 10	<ul style="list-style-type: none"> <li>o Upon City's receipt of Off-Site No Further Action Letter from DTSC, City would forever &amp; completely release and discharge Rohr from all claims including but not limited to environmental liabilities &amp; consequential costs in any way related to hazardous materials released at &amp; migrating from Site to Off-Site locations identified in the Off-Site RAP whether known or unknown</li> <li>o Release would not extend to category of claims relating to Off-Site—toxic tort, personal injury or property damage claims brought by persons other than City or Developer &amp; claims for natural resource damage</li> <li>o Should the provisions of Agreement concerning Off-Site be terminated, City would reserve whatever legal rights &amp; claims it may have against Rohr &amp; other parties</li> </ul>
Release of Claims by Developer Section 9, pp. 10 - 11	<ul style="list-style-type: none"> <li>o Within 60 days of execution of Agreement, City must cause Developer to execute written release of claims in favor of Rohr</li> <li>o Should City fail to perform this covenant, Rohr may terminate Agreement</li> </ul>
On-Site Indemnification & Financial Assurance Section 10, p. 11	<ul style="list-style-type: none"> <li>o Except for claims not released in Agreement &amp; effective upon the City's receipt of On-Site No Further Action Letter, City would indemnify, defend, &amp; hold harmless Rohr from all liabilities related to hazardous materials found On-Site</li> <li>o City must also require Developer to post performance bond or similar financial assurance to ensure completion of site mediation</li> </ul>

Section, Title, Page	Description
Environmental Insurance Section 11, pp. 11 -12	<ul style="list-style-type: none"> <li>o Parties would make reasonable efforts to obtain Pollution Legal Liability (PLL) insurance for Site &amp; Off-Site with Rohr taking lead</li> <li>o Rohr must investigate 2 options for PLL insurance—single policy naming both City &amp; Rohr as insured and 2 PLL insurance policies that separately provide coverage for Rohr &amp; City</li> <li>o Each party retains right to elect whether to obtain joint or separate coverage</li> <li>o If parties agree to purchase joint PLL insurance policy, Rohr would pay first \$150,000 of one-time premium with 50/50 split of remaining cost of premium</li> <li>o If parties agree not to purchase joint PLL insurance &amp; City elects to purchase own PLL insurance, Rohr must contribute \$150,000 toward cost of City's one-time premium</li> </ul>
No Admission of Liability Section 16	<ul style="list-style-type: none"> <li>o Parties make no admissions of fact or law</li> <li>o Intent of parties that Agreement not establish or be used by either party or any third parties as precedent or admission of liability</li> </ul>

## SETTLEMENT, RELEASE, AND INDEMNIFICATION AGREEMENT

This Settlement, Release, and Indemnification Agreement ("Agreement") is entered into on this 16th day of February, 2006, by and among Rohr, Inc., a Delaware Corporation ("Rohr"), and the City of Riverside, California (the "City"). The City and Rohr are referred to as "the Parties." The Parties make this Agreement to settle past differences and further the City's efforts to address environmental conditions at Ag Park so it can be redeveloped for housing.

### RECITALS

A. This Agreement concerns the real property identified as Assessor Parcel Numbers 155 040 004 and 155 040 005, County of Riverside, California (the "Site"), near Crest and Rutland Avenues. The City owns the Site, which is referred to as Ag Park.

B. From approximately 1942 to 1965, a sewage treatment plant operated at the Site. The Parties understand that the Site became contaminated with Hazardous Materials, primarily PCBs, as a result of the sewage treatment plant operations. Extensive environmental investigations have been conducted at the Site. They identify areas of PCB soil contamination at varying locations and depths. Based on testing to date, the Off-Site PCB contamination is minimal and at levels below state standards.

C. The City would like to clean up the contamination at the Site and facilitate its redevelopment for housing. Restoring Ag Park for residential use will benefit all members of the community. The City and Rohr have a common objective of working together to facilitate the restoration of Ag Park so it can be put to productive use. This Agreement is intended to advance that objective, without an admission of liability by any Party.

D. The City wants to redevelop the Site for residential use through its contracts with a real estate developer ("Designated Developer"). The Parties understand that the Designated Developer intends to build single family detached homes on the Site after Remediation is completed. The City has entered or will be entering into contracts with the Designated Developer regarding such future development.

E. The City is in negotiations with the California Department of Toxic Substances Control ("DTSC") to enter into a voluntary cleanup agreement to enable residential redevelopment of the Site. The City has advised Rohr that it will supervise and arrange for the Designated Developer to perform the On-Site Remediation, as approved by DTSC under the City's voluntary cleanup agreement.

F. The Parties enter into this Agreement for the purpose of settling certain claims, demands, and causes of action (administrative, judicial, or otherwise) between them with respect to the Site and PCB contamination migrating from the Site to Off-Site, and seek to avoid the expense, uncertainty and delay of litigation.

## AGREEMENT

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the Parties hereby agree as follows:

### Section 1. Definitions

1.1 "**City**" means the City of Riverside, its authorized representatives and officials, its assigns, employees, agents, and any and all other persons or entities who are acting or who have acted at any time on behalf of the City.

1.2 "**Claims**" shall have the meaning set forth in Section 7.2.

1.3 "**Consequential Costs**" means costs incurred by the Parties because of a failure by Designated Developer to undertake or to complete environmental investigative or remedial work, including Remediation, agreed upon by the City with governmental agencies with jurisdiction over the Site.

1.4 "**Designated Developer**" means the real estate developer who will acquire the Site under an agreement with the City for the purpose of building single family residential housing on the Site, and that real estate developer's parent and affiliated companies, joint venturers, partners, predecessors, successors, assigns, shareholders, members, officers, directors, employees, agents, and any and all other persons or entities who are acting or who have acted at any time on behalf of the real estate developer. The Parties understand that, at this time, the Designated Developer is Friends of the Riverside Airport, LLC.

1.5 "**Environmental Liabilities**" means all past, present and future claims, of whatever kind or nature, contingent or otherwise, foreseeable or unforeseeable, suits, causes of action, demands, losses, damages (including, without limitation, foreseeable and unforeseeable consequential damages, punitive damages and natural resource damages), diminution of property value, liabilities, fines, penalties, costs, taxes, charges, judicial proceedings, orders, judgments, settlements, administrative proceedings, remedial actions and compliance requirements (including, without limitation, notices of noncompliance, charges, directives, demands, requests for information and consent agreements), enforcement and cleanup actions, third-party claims (including, without limitation, tort, personal injury, economic and property claims, and Proposition 65 suits), expenses (including, without limitation, added costs of redevelopment, defense costs, and reasonable fees and expenses of attorneys, experts and consultants), arising directly or indirectly, in whole or in part, out of, or in any way related to, the Release of any Hazardous Materials at, on, in, under or from the Site before the date of this Agreement.

1.6 "**Environmental Laws**" means all applicable present and future laws that relate to the protection of human health, safety, wildlife or the environment, including, but not limited to, all: (a) federal, state and local laws, regulations, rules and other written requirements; (b) licenses, permits, orders, approvals, plans and similar items of all federal, state and local governmental authorities; and (c) applicable judicial and administrative decrees, judgments, orders and directives.

- 1.7 **"External Costs"** shall have the meaning set forth in Section 4.2.
- 1.8 **"Hazardous Materials"** means any substance, material or waste:
- (i) the presence of which requires investigation, monitoring or remediation under any Environmental Laws or any federal, state or local policy or guideline; or
  - (ii) which is or becomes listed, regulated or defined as a hazardous or toxic waste, pollutant, contaminant, material or substance under any Environmental Laws, and shall include, without limitation, PCBs, gasoline, diesel fuel or other petroleum products and their additives.
- 1.9 **"Internal Costs"** shall have the meaning set forth in Section 4.2.
- 1.10 **"On-Site"** means within the property boundaries of the Site.
- 1.11 **"On-Site Escrow"** means the escrow account established under Section 3 of this Agreement.
- 1.12 **"On-Site No Further Action Letter"** means a letter from DTSC (or a government agency that is the successor to DTSC regarding cleanup of Ag Park) stating that Remediation at the Site has been fully completed so that it is suitable for residential use and single family detached homes, without deed restrictions or engineering controls.
- 1.13 **"Off-Site"** means real property (and associated soil, groundwater, and surface water) outside of the property boundaries of the Site that are identified in the Off-Site RAP as containing Hazardous Materials Released at and migrating from the Site.
- 1.14 **"Off-Site Escrow"** means the escrow account established under Section 4 of this Agreement.
- 1.15 **"Off-Site No Further Action Letter"** means a letter from DTSC or any other federal or state agency with jurisdiction over the Off-Site cleanup stating that Remediation in the Off-Site has been completed to a standard acceptable for its current land use.
- 1.16 **"Off-Site RAP"** means a remedial action plan, which shall include an estimate of the costs to complete Off-Site Remediation, prepared by the City or its consultants, and approved by a federal or state agency with jurisdiction over the Off-Site, completion of which shall result in the issuance of an Off-Site No Further Action Letter.
- 1.17 **"Off-Site Remediation Costs"** shall have the meaning set forth in Section 4.2.
- 1.18 **"PCBs"** means polychlorinated biphenyls of any variety or concentration, unless otherwise specified.

1.19 **"PLL Insurance"** shall mean environmental pollution legal liability insurance providing, at a minimum, for a term of not less than ten years, ten million U.S. dollars (\$10,000,000) coverage for: (i) on-site and off-site required cleanup of pre-existing conditions following issuance of a "no further action" letter; and (ii) third party claims for on-site and off-site bodily injury and property damage resulting from pre-existing conditions.

1.20 **"Release"** or **"Released"** has the meaning set forth in Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

1.21 **"Remediation"** means any and all environmental investigation, sampling, data collection, preparation of technical reports, removal, disposal of contaminated media, remediation, restoration, treatment, operations and maintenance, and monitoring.

1.22 **"Rohr"** means Rohr, Inc. and its predecessor Rohr Aircraft Corporation (also known as Rohr Industries, Inc.).

1.23 **"Rohr's 50% Contribution to Off-Site Escrow"** shall have the meaning set forth in Section 4.3.

1.24 **"Rohr Released Parties"** means Rohr and its parent, Goodrich Corporation, and their affiliated companies, predecessors, successors, assigns, shareholders, officers, directors, employees, and agents, and any and all other persons or entities who are acting or who have acted at any time on behalf of Rohr.

1.25 **"Site"** means the Ag Park site which consists of Assessor Parcel Numbers 155 040 004 and 155 040 005, near Crest and Rutland Avenues, County of Riverside, California. A legal description is attached as Exhibit A showing the boundaries of the Site.

## **Section 2. Recitals Incorporated into Agreement**

2.1 The Parties incorporate into this Agreement the recitals set forth above as part of the terms of the Settlement Agreement. The recitals are "recitals" within the meaning of Evidence Code § 622.

## **Section 3. Payment to City: On-Site Remediation**

3.1 Within ten calendar days of execution of this Agreement, Rohr shall place into the On-Site Escrow the amount of one million five hundred thousand U.S. dollars (\$1,500,000), which will then be handled as set forth below:

3.1.1 The City shall promptly notify Rohr and the escrow agent for the On-Site Escrow in writing of the date it receives the On-Site No Further Action Letter and provide a copy to both.

3.1.2 Following the completion of the On-Site Remediation required under agreements and/or orders between the City and DTSC, within thirty (30) calendar days after the receipt by the City

of a final On-Site No Further Action Letter in a form reasonably acceptable to Rohr, Rohr shall instruct the escrow agent to release the funds held in the On-Site Escrow to the City.

3.1.3 Should the Designated Developer not complete Remediation of the Site or withdraw from the project, or should DTSC or similar agency fail to provide an On-Site No Further Action Letter to the City within three years of the date of execution of this Agreement, then the money in the On-Site Escrow shall be returned to Rohr and the provisions of this Agreement pertaining to the On-Site shall promptly be terminated as provided in Section 25.

3.1.4 The Parties agree to execute an On-Site Escrow agreement in the form set forth in Exhibit B. The On-Site Escrow agreement shall include a provision that authorizes the escrow agent to disburse to Rohr the escrowed funds automatically at the end of the three-year period, without the need for either Party to consent to or authorize such release. The City and Rohr may agree to extensions of this three year time period, but such extensions shall be in writing signed by both Parties, and the On-Site Escrow agreement shall be amended in writing accordingly.

3.1.5 The On-Site Escrow funds shall be maintained in an interest-bearing account or accounts, with all interest accruing to the party receiving the one million five hundred thousand U.S. dollars (\$1,500,000) upon payout in accordance with this Agreement.

#### **Section 4. Payment to City: Off-Site Remediation**

4.1 The City and Rohr shall share the costs of the Off-Site Remediation on a 50/50 basis, up to the total amount of three million U.S. dollars (\$3,000,000), with the City and Rohr each contributing up to one and a half million U.S. dollars (\$1,500,000).

4.2 The City shall tender to Rohr invoices for Off-Site Remediation work it conducts in accordance with Section 6 of this Agreement. Such invoices may include government oversight costs and the costs of technical consultants, engineers, and contractors for Off-Site Remediation ("*External Costs*"). Such invoices may also include the City's internal costs for staff, attorneys and outside counsel for work documented to be performed solely for Off-Site Remediation ("*Internal Costs*"). The External and Internal Costs shall be collectively referred to as "*Off-Site Remediation Costs*". Rohr shall reimburse the City for 50% of Off-Site Remediation Costs within 90 days of receipt of invoices properly documenting such expenditures, unless Rohr disputes the costs using the procedures set forth in Section 12. Rohr's obligation to reimburse Internal Costs shall be limited to one hundred and twenty-five thousand U.S. dollars (\$125,000).



4.3 Within ten calendar days of government agency approval of the Off-Site RAP, Rohr shall place into the Off-Site Escrow 50% of the estimated costs of Off-Site Remediation, as identified in the Off-Site RAP ("*Rohr's 50% Contribution to Off-Site Escrow*").

4.4 The Parties agree to execute an Off-Site Escrow agreement in the form set forth in Exhibit C. The Off-Site Escrow agreement shall authorize the escrow agent to make payments to the City, upon presentation of invoices for Internal and External Costs, unless Rohr objects in writing to disbursement of such costs as provided in Section 4.5.

4.4.1 The Off-Site Escrow agreement shall include a provision that authorizes the escrow agent to disburse any remaining escrowed funds automatically to Rohr within sixty (60) days after the City receives an Off-Site No Further Action Letter in a form reasonably acceptable to Rohr, without the need for either Party to consent to or authorize such release.

4.4.2 The Off-Site Escrow funds shall be placed into an interest-bearing account or accounts, with all interest available to be spent on Off-Site Remediation up to the receipt of an Off-Site No Further Action Letter. Any remaining interest and funds after receipt of an Off-Site Further Action Letter shall thereafter promptly be disbursed by the escrow agent back to Rohr.

4.4.3 The City and Rohr may agree to modifications of the Off-Site Escrow, but such modifications shall be in writing signed by both Parties, and the Off-Site Escrow agreement shall be amended in writing accordingly.

4.5 The City shall direct the Off-Site Remediation so that the Off-Site Remediation Costs are commercially reasonable, necessary and consistent with costs incurred for similar types of Remediation projects.

4.5.1 Rohr shall have the right to review the City's accounting and its books and records and to be informed in detail by the City or its agents of what actions were performed and costs incurred in Off-Site Remediation.

4.5.2 If Rohr disputes the reasonableness or necessity of any Off-Site Remediation Costs, it shall notify the City and the escrow agent for the Off-Site Escrow in writing, stating the basis for its dispute. The escrow agent for the Off-Site Escrow shall not disburse funds for any such disputed costs to the City for a period of sixty (60) days.

4.5.3 Within twenty (20) days of receiving a written statement disputing any Off-Site Remediation Costs, senior management of the City and Rohr shall meet to discuss and attempt to resolve such

dispute on an informal basis. If they successfully resolve the dispute within the 60 day period, they shall provide appropriate instructions to the Off-Site Escrow agent.

4.5.4 In the event that senior management of the City and Rohr are *not* able to resolve a dispute informally within the 60 day period, the escrow agent shall disburse the requested amount to the City, but Rohr may request binding arbitration of the dispute under Section 12.

4.6 Rohr's obligation to pay ongoing costs of Off-Site Remediation under Section 4.2 and Rohr's 50% Contribution to Off-Site Escrow under Section 4.3 shall not exceed a total of one and a half million U.S. dollars (\$1,500,000).

4.6.1 If the cost to complete the Off-Site Remediation and obtain an Off-Site No Further Action Letter exceeds a total of three million dollars (\$3,000,000), then the provisions of this Agreement pertaining to the Off-Site shall be promptly terminated, unless the Parties agree in writing to modify the Agreement. At that point, each party shall reserve all rights and retain the ability to make any claims or pursue any negotiations regarding future costs for further Off-Site Remediation with each other and with third Parties, as provided in Section 25.4. Both Parties shall, however, after the expenditure of a total of three million dollars (\$3,000,000) release each other from any claim for and waive the right to recover any of the costs already expended and incurred for the Off-Site Remediation before termination of this Agreement as provided for in this Section 4.6.1.

## **Section 5. Performance of On-Site Remediation**

5.1 The City shall arrange for, manage, supervise, and direct all On-Site Remediation of Hazardous Materials, whether performed by the Designated Developer, the City, or consultants and contractors acting at their direction, and shall use commercially reasonable efforts to obtain an On-Site No Further Action Letter.

5.2 The City shall use commercially reasonable efforts to ensure that Designated Developer undertakes and completes all steps to fully perform On-Site Remediation necessary in order to obtain the On-Site No Further Action Letter.

5.2.1 All On-Site Remediation shall be conducted: (i) in a diligent fashion by experienced and qualified contractors acting under the supervision of experienced and qualified environmental consultants and engineers, (ii) pursuant to written workplans which shall be approved by DTSC or the government agency supervising the work, (iii) in accordance with applicable laws, and (iv) following the receipt of required permits, licenses and approvals.

5.3 Rohr's name shall not be used on any manifests or similar documents regarding wastes or debris removed from the On-Site for disposal or treatment and Rohr shall not be deemed to be the generator of any materials removed from the On-Site.

5.4 The City shall promptly provide Rohr with any final reports regarding completion of On-Site Remediation as well as the On-Site No Further Action Letter.

5.5 The City shall be responsible for managing the Site, allowing access, communicating with the federal and state agencies, paying oversight costs, performing well closures, and proper cleanup and closure of any portions of the Site.

#### **Section 6. Performance of Off-Site Remediation**

6.1 The Parties understand that some limited sampling has been performed by the City and its consultants Off-Site and that the results to date do not exceed State standards or require Remediation. The City has submitted a report to DTSC of sampling conducted in the Off-Site and awaits a determination from DTSC on whether any Off-Site Remediation will be required.

6.2 The City shall arrange for, manage, supervise, direct and perform Off-Site Remediation of Hazardous Materials Released at and migrating from the Site, if any is required by DTSC or other government agency with jurisdiction.

6.2.1 The City shall ensure that any Off-Site Remediation of Hazardous Materials is conducted at the City's direction and in accordance with the City's instructions.

6.2.2 All Off-Site Remediation shall be conducted: (i) in a diligent fashion by experienced and qualified contractors acting under the supervision of experienced and qualified environmental consultants and engineers, (ii) pursuant to written workplans which shall be provided to Rohr and approved by DTSC or the government agency supervising the work, (iii) in accordance with applicable laws, and (iv) following the receipt of required permits, licenses and approvals.

6.3 Rohr's name shall not be used on any manifests or similar documents regarding wastes or debris removed from the Off-Site for disposal or treatment and Rohr shall not be deemed to be the generator of any materials removed from the Off-Site.

6.4 The City shall promptly provide Rohr with written copies of all correspondence, orders, technical reports, data, evaluations and communications to or from government authorities in any way related to Remediation of Hazardous Materials Released at and migrating from the Site to Off-Site, including any information showing progress towards, non-compliance with, or completion of Off-Site Remediation. The City shall also keep Rohr fully informed of the status of activities Off-Site.

6.5 The City shall be responsible for managing Off-Site Remediation, allowing access, communicating with the federal and state agencies, paying oversight costs, performing well closures, and proper cleanup and closure of any portions of the Off-Site.

6.6 The City shall promptly provide a copy of the Off-Site No Further Action Letter to Rohr and the Off-Site Escrow agent after the City receives it.

#### **Section 7. Release of Claims by City: On-Site**

7.1 The release of On-Site Claims set forth in this Section 7 shall become fully and irrevocably effective at the time the City receives an On-Site No Further Action Letter. Should the provisions of this Agreement concerning the On-Site be terminated as set forth in Sections 3.1.3 and 25.2, this release shall *not* take effect and the City shall reserve whatever legal rights and Claims it may have against Rohr and other Parties.

7.2 Effective upon the City's receipt of an On-Site No Further Action Letter and the City's receipt of the On-Site Escrow funds, the City shall forever and completely release and discharge the Rohr Released Parties from all claims, liens, liabilities, losses, damages, causes of action, claims for relief, claims for costs, or any other liability whatsoever ("Claims"), including, but not limited to, all Environmental Liabilities and Consequential Costs in any way related to Releases of Hazardous Materials On-Site, whether known or unknown, *provided however* that this release shall *not* extend to the following limited category of Claims relating to the On-Site: (i) toxic tort, personal injury or property damage Claims brought by persons other than the City or Designated Developer and their parent and affiliated companies, joint venturers, partners, predecessors, successors, assigns, shareholders, members, officers, directors, agents, employees, contractors, engineers, and consultants; and (ii) Claims for natural resource damages.

7.3 The City understands the meaning and effect of California Civil Code Section 1542 which provides:

A general release does not extend to claims which the creditor does not know or suspect to exist in his favor at the time of executing the release, which if known by him must have materially affected his settlement with the debtor.

The City assumes the risk of any and all unknown, unanticipated or misunderstood defenses, claims, causes of action, contracts, liabilities, indebtedness and obligations which are released by this Agreement and hereby waives and releases all rights and benefits which it might otherwise have under California Civil Code Section 1542.

#### **Section 8. Release of Claims by City: Off-Site**

8.1 The release of Off-Site Claims set forth in this Section 8 shall become fully and irrevocably effective at the time the City receives an Off-Site No Further Action Letter. Should the provisions of this Agreement concerning the Off-Site be terminated as set forth in Sections 4 and 25, this release of Off-Site Claims shall *not* take effect. In that event, the Parties shall

reserve whatever legal rights and Claims they may have against each other and against third Parties, except as provided in Section 4.6.

8.2 Effective upon receipt of an Off-Site No Further Action Letter, the City shall forever and completely release and discharge the Rohr Released Parties from all Claims including, but not limited to, all Environmental Liabilities and Consequential Costs in any way related to Hazardous Materials Released at and migrating from the Site to the Off-Site locations identified in the Off-Site RAP, whether known or unknown, *provided however* that this release shall *not* extend to the following limited category of Claims relating to the Off-Site: (i) toxic tort, personal injury or property damage Claims brought by persons other than the City or Designated Developer and their parent and affiliated companies, joint venturers, partners, predecessors, successors, assigns, shareholders, members, officers, directors, agents, employees, contractors, engineers, and consultants; and (ii) Claims for natural resource damages.

8.3 The City understands the meaning and effect of California Civil Code Section 1542 which provides:

A general release does not extend to claims which the creditor does not know or suspect to exist in his favor at the time of executing the release, which if known by him must have materially affected his settlement with the debtor.

The City assumes the risk of any and all unknown, unanticipated or misunderstood defenses, claims, causes of action, contracts, liabilities, indebtedness and obligations which are released by this Agreement and hereby waives and releases all rights and benefits which it might otherwise have under California Civil Code Section 1542.

#### **Section 9. Release of Claims by Designated Developer**

9.1 Within sixty (60) days of execution of this Agreement, the City shall cause the Designated Developer to execute a written release of Claims in favor of the Rohr Released Parties [and the City] in the form substantially similar to Exhibit D and reasonably acceptable to Rohr. Should the City fail to perform this covenant, Rohr may terminate this Agreement, with any escrowed funds released to Rohr, together with any interest accruing on such funds. The Parties may agree to an extension of this sixty (60) day period, but only if such agreement is made in writing and signed by both Parties.

#### **Section 10. On-Site Indemnification and Financial Assurance**

10.1 Except for Claims not released in Section 7.2, effective upon the City's receipt of an On-Site No Further Action Letter, the City shall indemnify, defend, and hold harmless the Rohr Released Parties from any and all Environmental Liabilities in any way related to Hazardous Materials found On-Site. For the avoidance of doubt, this indemnity shall not extend to any Claims related to Hazardous Materials in the Off-Site.

10.2 The City shall promptly assume its defense and indemnification obligations (with counsel reasonably acceptable to Rohr) upon written notice from Rohr. At the City's request,

Rohr shall reasonably cooperate in the defense of a claim at Rohr's own expense. The City shall not settle any claim without Rohr's written agreement, which agreement shall not be unreasonably withheld.

10.3 In its contracts with the Designated Developer, the City shall require that the Designated Developer post a performance bond or similar financial assurance to ensure completion of the Designated Developer's responsibilities for Remediation at the Site, in a form reasonably acceptable to Rohr.

#### **Section 11. Environmental Insurance**

11.1 The Parties shall use commercially reasonable efforts to obtain PLL Insurance for the Site and the Off-Site. Rohr shall take the lead in investigating the availability, terms and pricing of PLL Insurance. The City shall cooperate by making available documents, reports and other information requested by PLL Insurance carriers in order to obtain quotes on premiums for PLL Insurance. The City shall not independently contact a broker to investigate PLL Insurance, but shall coordinate with Rohr and the broker selected by Rohr.

11.2 The Parties agree that Rohr may investigate, at a minimum, two options for PLL Insurance: (1) a single PLL Insurance policy that names both the City and Rohr as insured Parties, and (2) two PLL Insurance policies that separately provide coverage for Rohr and for the City. Each Party retains the right, in its sole discretion, to elect whether to obtain joint or separate coverage.

11.3 Each Party also retains the right, in its sole discretion, to determine whether any available PLL Insurance is reasonably priced and whether it wants to purchase such coverage.

11.4 If the Parties agree that they wish to purchase a specific joint PLL Insurance policy, Rohr shall pay the first \$150,000 of the cost of the one-time premium, with each Party sharing equally (50/50) the remaining cost of the premium. After purchasing joint PLL Insurance, neither Party may cancel such insurance, nor may a Party request a change in the PLL Insurance without the written consent of the other Party.

11.5 In the event that the Parties do not agree to purchase Joint PLL Insurance, but the City elects to purchase its own separate PLL Insurance, Rohr shall contribute \$150,000 towards the cost of the City's one-time insurance premium.

11.6 In electing to purchase joint or separate PLL Insurance, neither Party represents or warrants to the other Party that such insurance is adequate to fully protect that Party's interests. In selecting PLL Insurance, each Party acknowledges that it will be represented by competent counsel who will provide expert advice to it on the risks, benefits and limitations of PLL Insurance, and that it is not relying on the other Party in exercising its rights under this Section 11.

## **Section 12. Dispute Resolution**

12.1 The Parties shall resolve any disputes that arise under this Agreement, including disputes concerning Off-Site Remediation Costs, in accordance with this Section 12.

12.1.1 In the first instance, any disputes shall be referred to senior management of the City and Rohr for informal resolution. If senior management is unable to resolve any dispute informally within twenty (20) days of receiving written notice, the Parties shall resolve the matter through binding arbitration.

12.1.2 An arbitration hearing shall be held before a single arbitrator to be mutually agreed upon by the City and Rohr. If the Parties cannot agree on an arbitrator, the arbitration shall be held before three arbitrators to be selected by an environmental mediation service agreed to by the Parties, or in the absence of agreement, to be selected from a panel of arbitrators in accordance with the procedures set forth in the American Arbitration Association ("AAA") commercial Arbitration Rules.

12.1.3 All relevant, nonprivileged documents, excluding summaries of expert testimony, will be exchanged before arbitration under procedures set by the arbitrator.

12.1.4 Summaries of expert testimony and all documents to be submitted as exhibits will be exchanged before arbitration under procedures set by the arbitrator.

12.1.5 Depositions will be permitted of all witnesses to be called at the arbitration hearing. Such witnesses will be designated before arbitration under procedures set by the arbitrator, except witnesses to be used only for rebuttal purpose.

12.1.6 The arbitration shall not exceed three days.

12.1.7 The arbitration decision, to be rendered not later than 30 days after the final day of the hearing, shall be judicially enforceable, non-appealable and binding, except to the extent set forth in the California Code of Civil Procedure 1286.2 and 1286.6.

## **Section 13. Representation and Warranty of Authority**

13.1 The City represents and warrants that it has taken all acts necessary, and has the authority, to enter into this Agreement and to perform all promises made in this Agreement.

#### **Section 14. Cooperation**

14.1 The Parties shall cooperate to minimize expenses and Environmental Liabilities, in a manner consistent with applicable laws and protective of public health and the environment. The Parties shall use best efforts not to prejudice one another's interests.

#### **Section 15. Advice of Counsel**

15.1 The Parties hereby promise that each Party: (i) has read this Agreement; (ii) has had the provisions, and consequences thereof, fully explained by such Party's legal counsel; and (iii) is freely and voluntarily signing this Agreement upon advice furnished by such Party's expert legal counsel and advisors.

#### **Section 16. No Admission of Liability**

16.1 The Parties entering into this Agreement make no admissions of fact or law. It is the intent of the Parties that this Agreement shall not establish or be used by either Party or any third parties as a precedent or an admission of liability.

#### **Section 17. Integration Clause**

17.1 This Agreement contains the entire agreement between the Parties relating to the settlement and transactions contemplated hereby, and all prior or contemporaneous agreements, understandings, representations, and statements, whether oral or written, are merged herein.

#### **Section 18. Neutral Interpretation**

18.1 The provisions contained in this Agreement shall not be construed in favor or against any Party because that Party or its counsel drafted part of this Agreement, but shall be construed as if all Parties prepared this Agreement, and any rules of construction to the contrary, including, without limitation, California Civil Code Section 1654, are specifically waived. The terms of this Agreement were negotiated at arm's length by the Parties.

#### **Section 19. Severability**

19.1 If any term or provision of this Agreement is determined to be illegal, unenforceable, or invalid, in whole or in part for any reason, then such provision or part thereof shall be stricken from this Agreement and such provision shall not affect the legality, enforceability, or validity of the remainder of this Agreement.

#### **Section 20. Counterparts**

20.1 This Agreement may be executed in any number of counterparts, each of which so executed shall be deemed to be an original. The counterparts shall constitute one and the same Agreement. Facsimile signatures shall have the same force and effect as original signatures.



## **Section 21. Authority**

21.1 The Parties warrant and represent that each of the persons executing this Agreement on behalf of a legal entity (i) has been authorized to do so by the entity on whose behalf it is being signed, and (ii) has the authority to bind the signatory Party for which he or she is signing to the performance of its obligations under this Agreement.

## **Section 22. Non-Assignment and Warranty**

22.1 The Parties represent and warrant that they are the sole owners of all rights and interest in the claims and other matters which they release, and that they have not assigned or transferred or purported to assign or transfer any claims, demands, actions, causes of action, damages or losses disposed of by this Agreement.

## **Section 23. Successors in Interest**

23.1 The terms, conditions, and provisions of this Agreement are binding upon and shall inure to the benefit of all assigns and successors in interest.

## **Section 24. California Law/Venue**

24.1 This Agreement shall be construed in accordance with and be governed by the laws of the State of California.

## **Section 25. Modification and Termination**

25.1 This Agreement may be modified only by a writing signed by the Parties.

25.2 With respect to On-Site Remediation, if and only if the City is unable to perform the On-Site Remediation within three years due to reasons beyond its control, then either Party may terminate the provisions of this Agreement pertaining to the On-Site without the consent of the other, by providing written notice to the other Party. If the City fails to perform the On-Site Remediation for any other reason, Rohr shall be entitled to specific performance. Notice of termination shall be made in writing addressed to the person signing below on behalf of the other Party and shall be effective five days after it is received. A copy of the notice of termination shall also be sent simultaneously to the escrow agent for the On-Site Escrow and any funds held in the On-Site Escrow shall be promptly returned to Rohr.

25.3 With respect to Off-Site Remediation, if the City is unable to perform the Off-Site Remediation and obtain an Off-Site Remediation No Further Action Letter for a total cost of less than three million dollars (\$3,000,000), then the provisions of this Agreement pertaining to the Off-Site shall be promptly and automatically terminated, as set forth in Section 4.6.

25.4 After termination of any provision of this Agreement under Sections 25.2 or 25.3, the Parties shall return to their respective positions and retain their respective arguments, claims,

or defenses, except as provided in Section 4.6.1. In such event, the Parties agree to negotiate in good faith towards a mutually agreeable solution.

25.5 The failure of a Party to exercise any right or remedy provided by this Agreement or by law shall not be a waiver of any obligation or right of the Parties, nor shall it constitute a modification of this Agreement.

#### Section 26. Notice

26.1 Any notice required, permitted or given under this Agreement shall be in writing:

To City: City Manager  
City of Riverside  
3900 Main Street  
Riverside, California 92522

To Rohr: Plant Manager  
Rohr, Inc.  
8200 Arlington Avenue  
Riverside, California 92503-1499

With a copy to:  
Office of the General Counsel  
Goodrich Corporation  
Four Coliseum Centre  
2730 West Tyvola Road  
Charlotte, North Carolina 28217-4578

All notices shall be provided by U.S. mail and by one of the following methods: (1) facsimile, (2) overnight courier, or (3) e-mail. Notices shall be deemed delivered upon actual receipt.

IN WITNESS WHEREOF this Agreement has been executed by the Parties on the day and year indicated below, as authorized by Ordinance No. \_\_\_\_\_ of the City Council.

The City of Riverside

Dated: \_\_\_\_\_

By: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

Dated: Feb 21, 2006

Rohr, Inc.

By: [Signature]

Print Name: GRANDY B. PETERS

Title: VP AND GM - OPERATIONS

APPROVED AS TO FORM  
[Signature]  
SUPERVISING DEPUTY CITY ATTORNEY  
216842821

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EXHIBIT A  
Property Description

216542621

-16-

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APN 155040-004 AND 155-040-005

Description of Property:

A real property in the City of Riverside, County of Riverside, State of California,  
described as follows:

TENTATIVE TRACT NO. 28987, BEING A SUBDIVISION OF A PORTION OF  
THE FOLLOWING:

THAT PORTION OF THE BIXMILL TRACT, AS SHOWN BY MAP ON FILE IN  
BOOK 16, PAGES 28, 29 AND 30 OF MAPS, RECORDS OF RIVERSIDE  
COUNTY, CALIFORNIA AND ALL THAT PORTION OF THE RANDOLPH  
SUBDIVISION AS SHOWN BY MAP ON FILE IN BOOK 16, PAGE 39 OF MAPS,  
RECORDS OF  
RIVERSIDE COUNTY, CALIFORNIA, MORE PARTICULARLY DESCRIBES  
AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF LOT 1, BLOCK 2,  
RANDOLPH SUBDIVISION; THENCE NORTH 0° 23' EAST, 330.00 FEET TO  
THE NORTHEAST CORNER OF SAID LOT 1, BLOCK 2, RANDOLPH  
SUBDIVISION;  
THENCE NORTH 89° 39' WEST ALONG THE NORTH LINE OF THE  
RANDOLPH SUBDIVISION, A DISTANCE OF 659.80 FEET TO THE  
NORTHEAST CORNER OF BLOCK 3, BIXMILL TRACT;  
THENCE NORTH 89° 30' 30" WEST ALONG THE NORTH LINE OF THE  
BIXMILL TRACT, A DISTANCE OF 1090.20 FEET;  
THENCE SOUTH 0° 23' WEST, 1600.00 FEET;  
THENCE SOUTH 89° 30' 30" EAST, 1100.00 FEET;  
THENCE SOUTH 0° 23' WEST, 300.00 FEET;  
THENCE SOUTH 89° 39' 40" EAST, 500.00 FEET;  
THENCE NORTH 0° 23' WEST, 1570.00 FEET;  
THENCE SOUTH 89° 37' EAST, 150.00 FEET TO THE POINT OF BEGINNING;


EXCEPTING THEREFROM ALL OIL, OIL RIGHTS, MINERALS AND  
MINERAL RIGHTS, NOT INCLUDING WATER, NATURAL GAS, NATURAL  
GAS RIGHTS,  
AND OTHER HYDROCARBONS BY WHATSOEVER NAME KNOWN, THAT  
MAY BE WITHIN OR WITH UNDER THE LAND, TOGETHER WITH THE  
RIGHT TO ENTER THE SUBSURFACE OF SAID LAND AS RESERVED BY  
ANZA  
REALTY COMPANY, IN DEED RECORDED DECEMBER 17, 1957 IN BOOK  
2194,  
PAGE 50 OF OFFICIAL RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

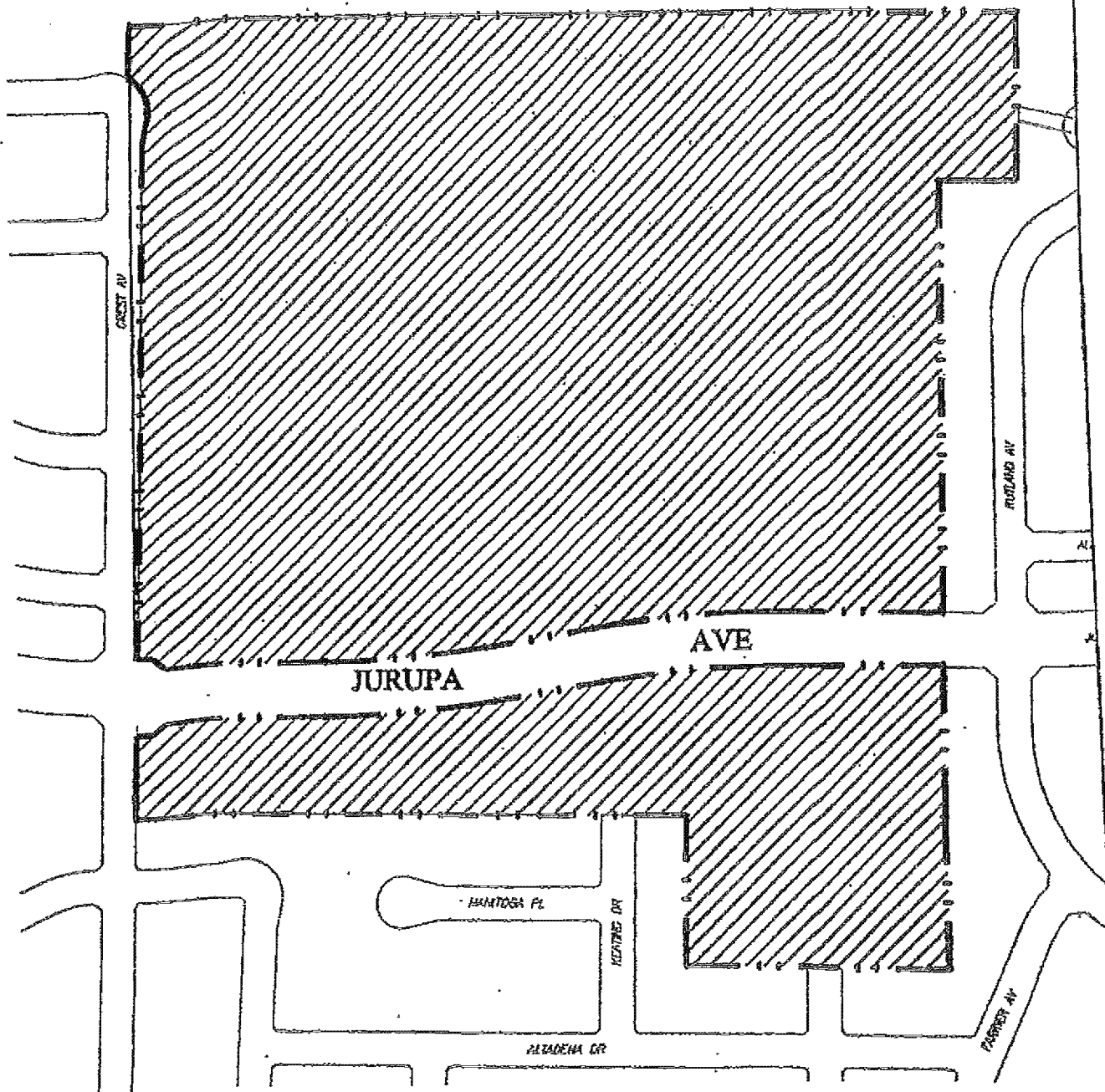
FURTHER EXCEPTING THEREFROM JURUPA AVENUE AS DESCRIBED IN DOCUMENT ENTITLED RESOLUTION NO.16050, DEDICATED FOR PUBLIC STREET PURPOSES, CITY OWNED LAND, RECORDED MARCH 4, 1986 AS INSTRUMENT NO. 50177, OFFICIAL RECORDS, RIVERSIDE COUNTY, CALIFORNIA;

FURTHER EXCEPTING THEREFROM CREST AVENUE AS DESCRIBED IN DOCUMENT ENTITLED RESOLUTION NO. 12882, DEDICATION FOR PUBLIC STREET PURPOSES, CITY OWNED LAND, RECORDED AUGUST 23, 1976 AS INSTRUMENT NO. 124577 OF OFFICIAL RECORDS, RIVERSIDE COUNTY, CALIFORNIA;

FURTHER EXCEPTING THEREFROM CREST AVENUE AS DESCRIBED IN DOCUMENT ENTITLED RESOLUTION NO. 15139, DEDICATION FOR PUBLIC STREET PURPOSES, CITY OWNED LAND, RECORDED OCTOBER 13, 1983 AS INSTRUMENT NOS. 212726 AND 212728, BOTH OF OFFICIAL RECORDS, RIVERSIDE COUNTY, CALIFORNIA.

DESCRIPTION APPROVAL:

 2/23/06  
MARK S. BROWN DATE  
CITY SURVEYOR



SCALE: 1" = 300'

**adkan**  
**ENGINEERS**  
 CIVIL ENGINEERING • SURVEYING • LAND PLANNING  
 8520 AIRPORT DRIVE, RIVERSIDE, CA 92504  
 TEL: (909) 840-0241 • FAX: (909) 840-0590

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EXHIBIT B  
On-Site Escrow Agreement

-17-

21654262 1

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EXHIBIT C  
Off-Site Escrow Agreement

21654282.1

-18-

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**EXHIBIT D**  
**Release of Liability By Designated Developer**

The Designated Developer forever and completely releases and discharges the Rohr Released Parties [and the City] from all Claims, including, but not limited to, all Environmental Liabilities and Consequential Costs in any way related to (i) Hazardous Materials Released On-Site; (ii) Hazardous Materials migrating from the Site to the Off-Site; and (iii) the Designated Developer's rights, interest and entitlements at the Site (including, but not limited to, Claims for interference with contract and similar Claims), whether such Claims are known or unknown.

The Designated Developer understands the meaning and effect of California Civil Code Section 1542 which provides:

A general release does not extend to claims which the creditor does not know or suspect to exist in his favor at the time of executing the release, which if known by him must have materially affected his settlement with the debtor.

The Designated Developer assumes the risk of any and all unknown, unanticipated or misunderstood defenses, claims, causes of action, contracts, liabilities, indebtedness and obligations which are released by this Agreement and hereby waives and releases all rights and benefits which it might otherwise have under California Civil Code Section 1542.

#8



People Serving  
People

# City of Riverside

## INTEROFFICE MEMORANDUM



TO: File

DATE: March 30, 2004

FROM: Siobhan Foster *WF*  
Administrative Services Manager

SUBJECT: Ag Park—03/30/04 Meeting with Tom Neumeyer

Tom Neumeyer, Heavy Equipment Operator, met with Ken Jolly, Senior Street Maintenance Supervisor, and myself, this afternoon at approximately 3:10 p.m. We met in Mr. Jolly's Office at the City's Corporation Yard. The meeting ended at approximately 3:35 p.m.

I started off by thanking Mr. Neumeyer for meeting with Mr. Jolly and myself. I then explained that I wanted to follow-up on the conversation Mr. Neumeyer had with David Loera. Specifically, I indicated that I wanted Mr. Neumeyer to identify the:

1. Specific locations to which he transported dirt from the Agricultural Park for use in street projects;
2. Locations within the Agricultural Park where he obtained the dirt for transport and use in street projects;
3. Approximate timeframe in which he transported dirt from the Agricultural Park to the specified locations for use in street projects; and
4. Source and destination of the soil moved within the Agricultural Park.

### Off-Site Locations

Mr. Neumeyer explained that the dirt he transported offsite was used primarily to replace dirt shoulders on roadways that had run-off in rainstorms. He recalls transporting dirt to the following locations:

1. Crest Avenue—dirt shoulder on the east side of the road between the roadway and the Agricultural Park's perimeter fence. (See CADME 34-8)
2. Jurupa Avenue—dirt shoulder on the west side between Cobb Street and the curve in the street. (See CADME 34-7)
3. Arlington Avenue—dirt shoulder on the north and south sides between Fairhaven Drive and before Crestlawn Memorial Park. (See CADME 47-2)
4. Tyler Street—dirt shoulder on the west side between Eureka Drive and Mandalay Court. (See CADME 49-2)

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#### Origin of Dirt

Mr. Neumeyer mentioned six locations within the Agricultural Park from which he transported dirt for street projects. He cited the southwest corner of the Park as the most commonly used location. (See Aerial Photo)

#### Timeframe

Mr. Neumeyer transported dirt from the Agricultural Park to off-site locations from approximately 1986- (when he started working for the City) to 1987/1988 (approximately 2 to 3 years after the barn stopped being used).

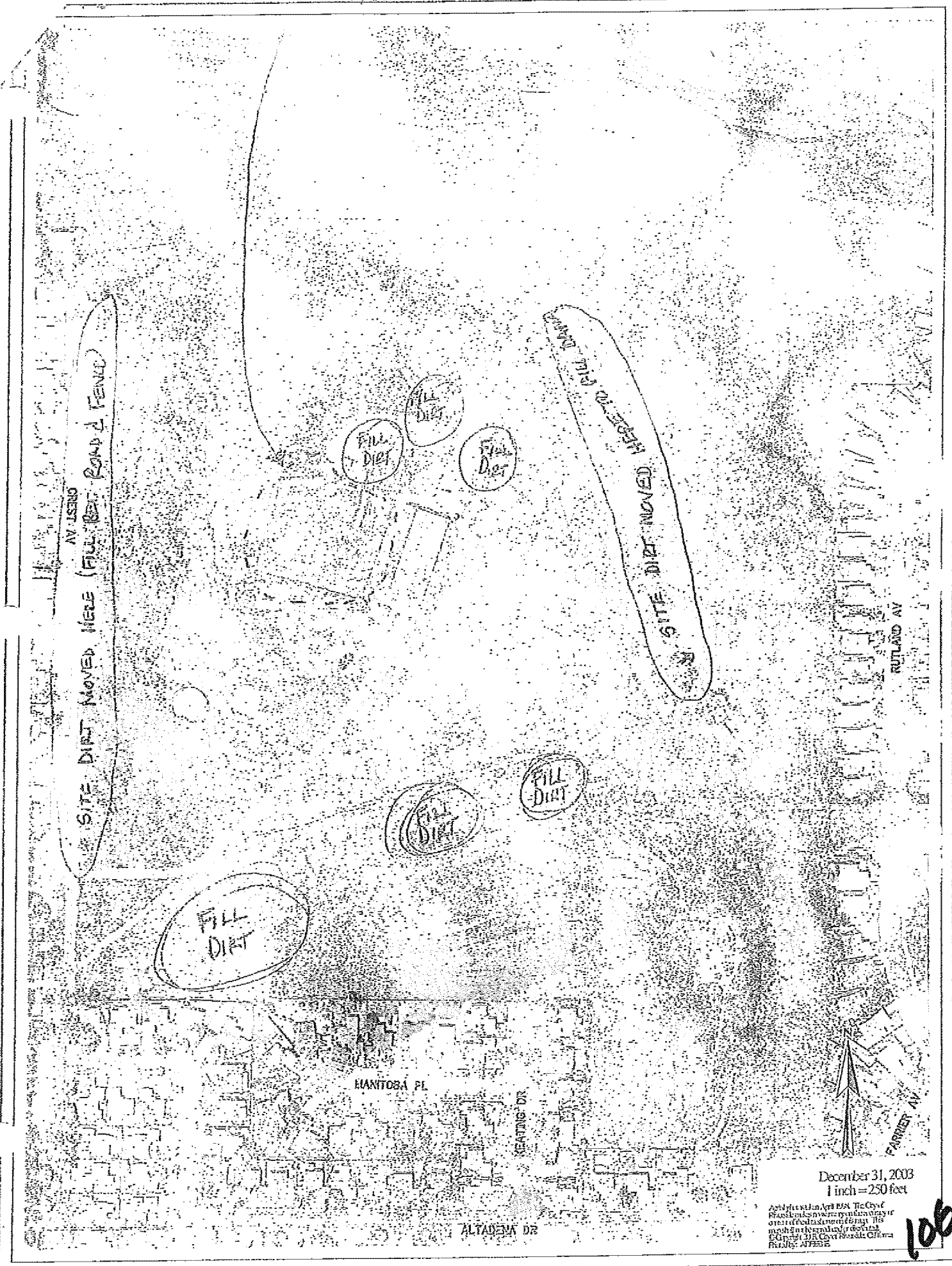
#### Activity within Park

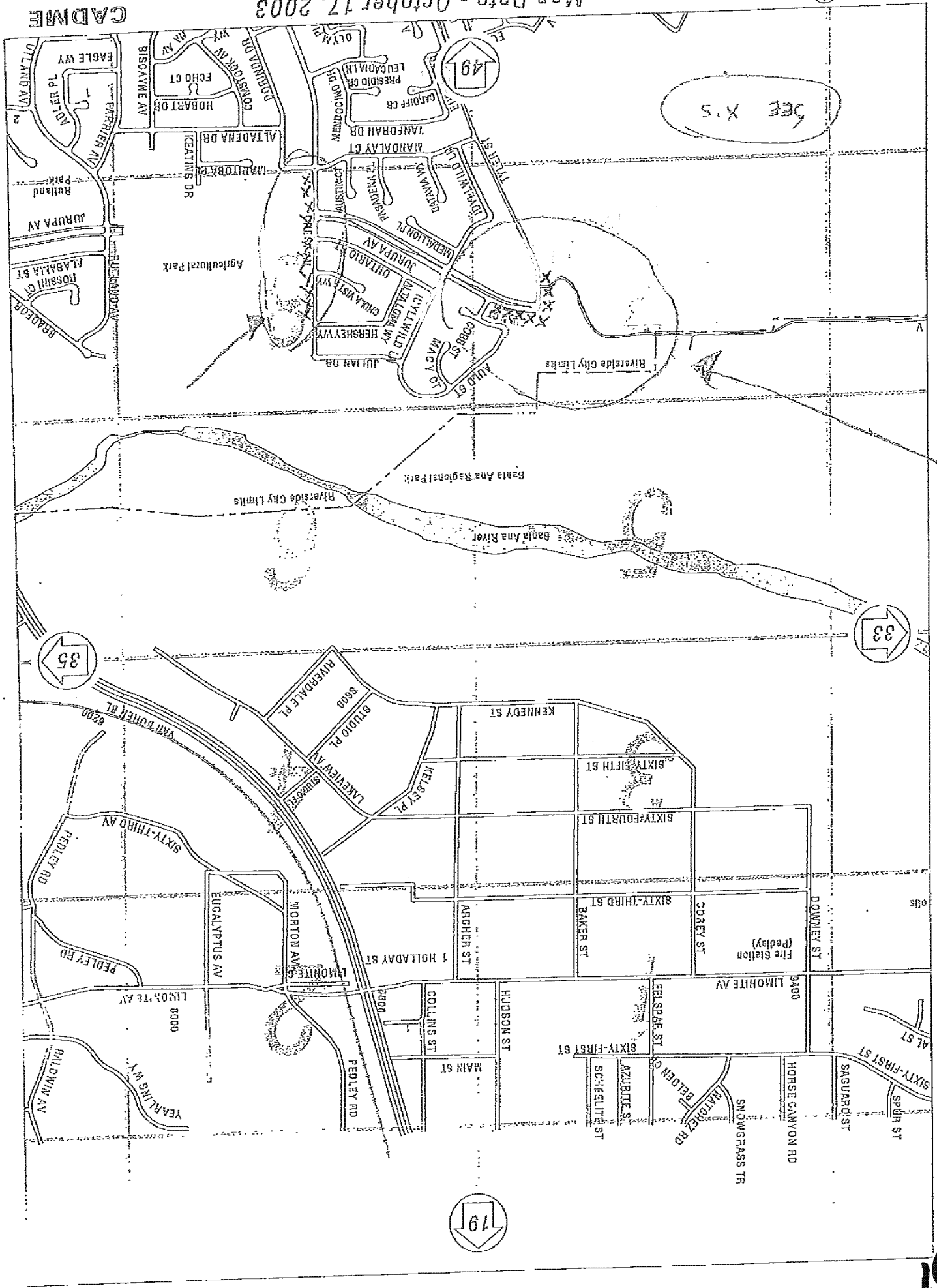
Soil from the six locations cited previously was transported to various locations within the Park. Mr. Neumeyer indicated fill dirt was used to repair a dam along the drainage course on the east side of the Park. He also indicated that dirt was used in association with the demolition/fill of the BMX track approximately 3 to 5 years ago.

On an unrelated note, Mr. Neumeyer mentioned that when repairing the dam, an Indian burial site was discovered.

Following our discussion and identification of the pertinent sites on the CADME maps and aerial photo, I again thanked Mr. Neumeyer for his cooperation. I also encouraged Mr. Neumeyer to contact me if he thinks of anything else that may be relevant to this topic. Mr. Neumeyer then reminded Mr. Jolly and I that soil was transported off-site to other locations for use in minor projects. Mr. Neumeyer indicated that he would have difficulty pinpointing such locations.

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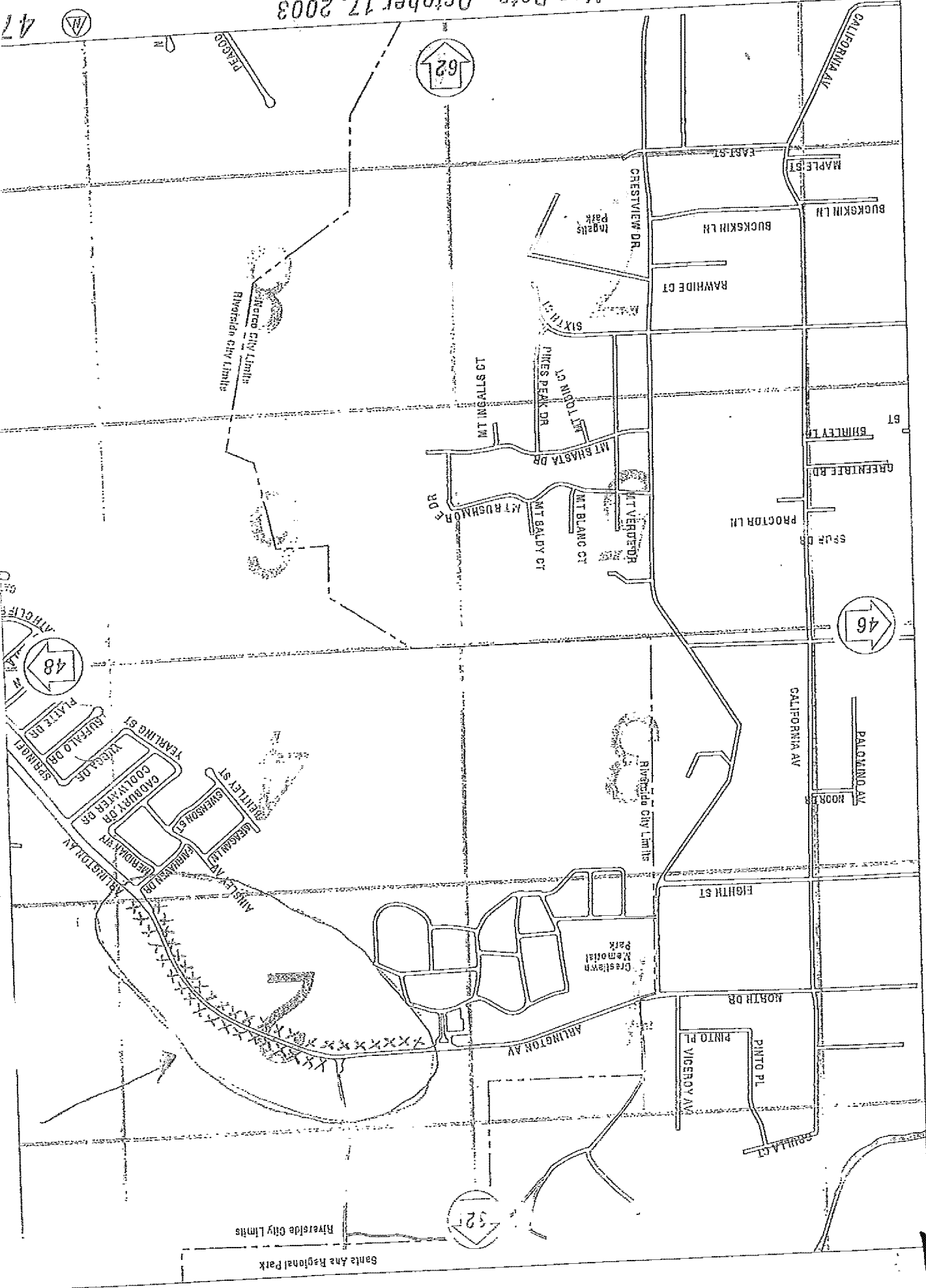




CADME

Map Date - October 17, 2003

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801

#9

Memo to File

From: Debbie Anderson  
Associate Engineer

*DM* (Riverside City  
Senior Engineer)

Subject: Jurupa Avenue Extension – Agricultural Park Site

Date: July 16, 2003

On the morning of July 7, 2003, Chuck Cox notified me via telephone that he had a problem at the Ag Park. He indicated that his contractor had encountered a tank full of sludge during removal of the abandoned Arlanza Treatment Plant facilities. The tank was breached resulting in a substantial sludge spill. His engineer, Bob Beers, estimated the total sludge volume (tank and spill) at around 43,000 gallons. Bob Beers indicated that the spill probably occurred on July 1 or 2. Prior to notifying the City, Mr. Cox unsuccessfully attempted to have the sludge pumped and removed from the site. According to Mr. Cox, the sludge could not be removed as the pumper truck operator refused to take the material to the Water Quality Control Plant (truck gage indicated pH value exceeding 8.5). I notified Tom Boyd, Steve Schultz, and Eddie Diaz of the sewage spill. Tom Boyd instructed Eddie Diaz to notify Mr. Cox to stop work. Tom Boyd also directed City Water Quality Control and Street Services staff to clean up the sludge spill. City staff arranged for pumping and cleanup of the tank and sampled the sludge for EPA priority pollutants.

On the morning of July 9, 2003, I met with Eddie Diaz and Charles Sperino at the Ag Park sludge spill site. Evidence of massive grading operations far exceeding 50 cubic yards was observed. Further inspection of the site revealed that the Contractor had filled in two earthen swales that drain existing Jurupa Avenue and portions of the subdivisions at Rutland. Extensive ponding with algae and grass was observed on the paved roadway. Further inspection revealed that the contractor was still working on site in an area westerly and northerly of Rutland. Recent evidence of fill was observed in the "blue-line" stream area as designated on the USGS quad sheet and recent biotechnical reports for the project. Dead willow trees, stumps, earthen fill, and standing water were observed in the watercourse. An apparent earthen fill crossing had also been created in the drainage course. Eddie Diaz spoke with the equipment operator onsite at the time of our visit. The operator indicated that he was currently removing a spillway in a northerly portion of the drainage course. Pictures were taken documenting the site conditions. I was unable to download the photographs taken during the first visit so I returned to the site in the afternoon. Further site inspection revealed additional grading in the drainage course area westerly of Rutland Avenue. The equipment operator was still working on site. Erosion control measures, water trucks, or other dust control measures were not observed on site. \*

The photographs taken in the afternoon on July 9 are attached to this memo.

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**From:** Rodney Cruze  
**To:** Schultz, Steve  
**Date:** 8/15/03 1:02PM  
**Subject:** Contaminated Sludge - My involvement

Steve,

Attached you will find a brief explanation of my involvement in the discovery, reporting and storage problems we have experienced as a result of the contaminated sludge from the old treatment plant.

Tom asked to be CC'd. He also asked me to ask you to have anyone that had anything to do with this (I'm assuming management) to report to him in memo their actions from July 24, 2003 to date.

Questions have been asked about the high bis(2-ethylhexyl)phthalate values in the contaminated sludge sample. The 40,200 ug/L that was seen there is actually an average value for sludge. The results of the five analysis done on our sludge in 2001 and 2002 are as follows: 12,200 ug/L, 89,000 ug/L, 64,000 ug/L, 63,000 ug/L and 13,300 ug/L.

Rocky

**CC:** Boyd, Tom

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DATE: August 15, 2003

TO: Steve Schultz, Wastewater Systems Manager

FROM: Rod Cruze, Compliance and Monitoring Manager

RE: **OLD SEWAGE PLANT CONTAMINATED SLUDGE**

Steve,

This memo is in response to your request for information on my involvement and actions to date with regard to the contaminated material that was found at the old sewage treatment plant.

My first involvement was on July 11, 2003. I was told that a pipe connected to an old style sludge digester at the old treatment plant site had been broken by a demolition crew and that about 11,000 gallons of material, believed to be sewage sludge, had leaked out into a pit. The material along with about one-foot of soil from underneath the pooled liquid had been placed in a sludge drying bed at our facility. I was asked by you to prepare a written report for the Regional Water Board. I spoke with Charles Sperino and visited the site to get a better idea of what had happened. Two Regional Board staff members joined us in our inspection of the site. We looked at the excavation to assure ourselves that the spill had been contained. We also looked at the lower chamber of the digester that still contained over 40,000 gallons of material. We were told that this material had been sampled the previous day for priority pollutants. I completed and transmitted the report to the board on the same day.

I was out of the office until July 29, 2003. When I returned I was told that the remainder of the sludge had been transported to our plant and that it would likely be disposed of in a manor similar to our grit and screenings or, possibly, mixed with our sludge. I looked at the analysis to see if the sludge met the requirements for land application under the federal 503 regulations. I noted that the analysis seemed to be on a wet basis not a dry basis (corrected for sample moisture). I asked our lab to check with the outside lab since this would make a large difference. Based on my calculations we could not land apply the material if the adjustment was done. It turned out that they hadn't adjusted the results since they did not know what we were going to use them for. We requested a revised report. It is worth noting that the 503 regulations do not anticipate high levels of organics like PCBs in standard digested sludge, so there are no limits for these compounds.

On August 5, 2003 you mentioned that Tom Boyd had met with the Regional Board about the old plant property and had some questions about the sludge analysis. You asked me to call him and see if I might be able to answer his questions. Since this was the first time I was looking at the data in general as opposed to in the context of the 503 regulations, I needed new benchmarks. I knew that Coleen had been asked to research other possible limitations that might apply to the material, so I asked her for the Title 22 hazardous material limitations she had downloaded. It was at that time that I noticed that

the PCB levels were hazardous. I was skeptical since we almost never see any detectable PCBs in our sludge. I asked our lab manager to check with the contract lab to see if there might be an error. When they confirmed the results, I spoke with you. Under your direction, I reported the incident to the Regional Board and the Office of Emergency Services (Report # 03-3942) that afternoon.

I began a phone log when I made the first notifications and have been logging all conversations with regulatory personnel since that time. I will make it available upon request.

At 8:37 A.M. on August 7, 2003 I received a call from Najah Amin of the Regional Water Board. He was concerned about the underdrains in the sludge bed and if the material we were storing could have leaked out. I told him what I had been told, that the old beds were no longer connected to the treatment plant, and assured him that I would personally check to verify it. I contacted Greg Stenke and asked him to show me the system. He explained that the old drain line had been disconnected but that a sump had been placed at the end of the beds to collect any material that might get into the underdrain system. These liquids were then pumped to a treatment plant junction box (I believe plant 1 primary effluent). When I asked him for a pump log I was told that the pump is on a float switch. It operated automatically. I asked Greg to disconnect and lock out the pump. He did so immediately.

In order to see if material had made its way to the sump from the storage bed, I suggested that we sample the water in the sump and resample the material in the bed to confirm the original analysis. We sampled that day. The samples were sent to a different lab that could expedite the analysis. The results showed low levels of PCBs in the sump water and confirmed the original sludge analysis for PCBs. At this point we had retained the services of a hazardous waste firm but my dealings with them was been minimal.

Acting on a request from the Legal Dept. to notify EPA, I filed a phone report with the National Response Center at 1:40 P.M. on August 7, 2003 (Report # 653-233).

Based on the sump results, on August 8, 2003 we sampled the sludge at our facility to see if we had a contamination problem. One sample from each of three days of production was sampled and analyzed for PCBs. No PCBs were detected in any of these samples or in the effluent sample taken the same day. This is a good indication that little, if any, of the PCB contamination entered the treatment waste stream. Soil samples were taken at the old site at the same time but I was not involved with that operation.

From that point on my involvement has been peripheral to the clean-up effort. I did make an initial contact with the department of Toxic Substances Control as requested on August 13, 2003. Per our discussion, I gave the contact name and number to Dion Castro.

Those are the highlights. If you would like any further clarification please ask.

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## Summary Chronology

8/11/2003

1

During the entire clean up operation typical PPE for work involving close proximity to bio-solids were offered to all individual who participated. Items such as leather and latex gloves, dust masks, potable water and anti-bacterial soap were readily available.

*Tues.* 7.08.03: Tasked with clean up of site, late afternoon most likely between 1400 and 1500 hrs.

7.09.03: Inspected site, Coordinated with Streets and RWQCP Operations (Ops). Wrote Purchase Request (PR) for Wrights Pumping. Coordinated with said vendor to arrange short notification of mobilization.

*THURS.* 7.10.03: Coordinated with Ops and Streets Division. Ops (Greg Stenke) collected another sample for analysis. Streets Division graded roadway, excavated spilled material plus one foot deep of earth just below material and transported it to RWQCP. Coordinated with RWQCP Maintenance for Concrete Coring to cut an access hole (10" circular) in deck of tank. Supervised Streets mobilization interfaced with respect to objective, transfer to RWQCP and periodically inspected their progress.

*Transported* →

Verbally notified CA Regional Water Quality Control Board Santa Ana River Section (RWQCB) via phone conversation. RWQCB indicated they wished to inspect the site on 7.11.03

All spilled material was removed from site.

7.11.03: Inspected site with RWQCB member Najah Amin and RWQCP Compliance Manager Rod Cruze.

Waiting for concrete deck of tank to be cut and PR approval for Wrights pumping.

7.14.03: Concrete Coring on-site to cut 10" circular Access hole in deck. PR for Wrights Pumping approved, Coordinated with vendor for 7.15.03

7.15.03: Wrights Pumping on-site. Ops (Roger Luther) performed dust control with water truck and assisted with pumping operation. Water supply provided by water truck. Attempted to connect hose to local hydrant for higher pressure, no success. Wrights Pumping equipment unable to handle density of material in tank, total volume removed approximately 2500 gallons. Latex gloves were made available to city and contractor personnel.

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## Summary Chronology

2

8/11/2003

Assessed the situation and determined Vactor Trucks and additional access holes were required to remove material from the tank. Coordinated with Streets Division, Ops, Collections and Concrete Coring.

Concrete Coring responded on same day of request. Cut two 24" by 24" square access holes in deck of tank. Contractor (Sal Bustillos) had material spilled on him while trying to knock out the first square cut. Clean up water, soap and wipes were offered to the contractor. Contractor refused items until both holes were completed. I cautioned said contractor to clean up immediately (standard wastewater practice when intimate contact with bio-solids is experienced). Wrights Pumping contractor (Jerry Bryson) experience small amounts of contact, the same hygiene items were offered to him.

7.16.03: Collections and Streets Vactor Crews on-site, Ops onsite to assist. Streets secured from operation after two loads. Ops performed dust control, water supply and extraction assistance. Collections Crew and Ops, vactor operation lasted entire workday.

7.17.03: Collection and Streets Vactor Crews on-site. Ops on-site to assist, Streets retired from project after two loads. Collection crew worked on vactor operation entire day, including overtime, operation continued until approximately 2000 hrs.

7.18.03: Collection Crew and Ops on-site. Vactor operation continued for entire day.

7.21.03: Collection crew and Ops on-site to continue vactor operation, small amount of hard to reach material remained at end of workday..

7.22.03: Collection Crew and Ops on-site to continue vactor operation. Performed confined space entry to remove material remaining in tank. Confined space procedure as outlined in City Policy followed. Remaining sludge was lodged onto peripheral of tank and around columns. PPE utilized include Tyvek suits, atmospheric monitoring, SCBA, blowers, man-lift, safety harness, Confined Space Entry log and work sheet, respirator, emergency first aid kit, rescue response equipment and portable electric generator. All equipment mandated for a confined space entry was either utilized for entry or on-site and available in the event of an emergency.

Placed steel plate barriers upon access holes at close of operation.

7.23.03 Ops pushed earth up around small holes on sides of tank.  
Secured from clean-up operation.

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#10

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ATTORNEY/CLIENT WORK PRODUCT  
DRAFT

April 2, 2004

Mr. Max Weintraub  
US EPA Region 9  
Mail Code CMD-4-2  
75 Hawthorne Street  
San Francisco, California 94105

Subject: Concrete Debris Characterization  
City of Riverside Agricultural Park  
Riverside, California

Dear Mr. Weintraub:

As you are aware, on behalf of the City of Riverside (City), Timothy Simpson of Geomatrix Consultants, Inc. (Geomatrix) has discussed with you characterization of concrete and rock associated with a former publicly owned treatment works (POTW) located on a City-owned parcel of land called the Agricultural Park. The POTW ceased operating in the early 1960s. This letter summarizes activities that have been performed to characterize the concrete and rock for offsite disposal.

Recently, sludge containing polychlorinated biphenyls (PCBs) was discovered in the lower section of the former POTW digester during demolition activities. The sludge was discovered after a contractor working on behalf of a potential site developer had demolished two clarifiers and portions of the digester. The contractor stockpiled the concrete debris into one large stockpile (Stockpile 1) and six smaller piles (Stockpiles 2, and 4 through 8). Rock from the inside of the digester also was stockpiled (Stockpile 3). These stockpiles are shown on the attached Figure 1.

Based on the presence of PCBs in the digester sludge, Frey Environmental (Frey), working on behalf of the developer, sampled the concrete and rock in Stockpiles 1 through 4 and the upper portion of the digester using a hand-held drill and concrete bit to remove the top approximate 0.5 centimeter (cm) of concrete surface that had been in contact with sludge associated with the former POTW (i.e., from the former inner surface of the clarifiers and upper portion of the intact digester). The former inner surface of the clarifier debris is easily recognized by the concrete form marks from its construction and its slightly darker color. These sampling activities were performed in accordance with Frey's December 2, 2003 Concrete Rubble Sampling plan (attached) submitted to, and approved by, Mr. Michael Shetler of the County of Riverside Department of Environmental Health.

Samples collected by Frey were submitted to Associated Laboratories of Orange, California for analysis of PCBs using EPA Method 8082. A total of 23 samples were collected by Frey on an

Note - never sent

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Mr. Max Weintraub  
US EPA Region 9  
April 2, 2004  
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ATTORNEY/CLIENT WORK PRODUCT  
DRAFT**

approximate 25-foot grid from Stockpiles 1 through 4 and four additional samples were collected by Frey from the upper portion of the digester (two from the wall and two from the floor). Only one of the stockpile samples collected by Frey had total PCBs exceeding 50 milligrams per kilogram (mg/kg). That sample was CS15 collected from Stockpile 1 and the reported total PCB concentration was 59 mg/kg. Three of the four samples collected by Frey from the digester exceeded 50 mg/kg, with reported concentrations of total PCBs of 61.8 mg/kg, 109.2 mg/kg, and 193.4 mg/kg. A copy of Frey's December 16, 2003 Concrete Rubble Sampling and Concrete Disposal letter is attached.

The City understands that on several occasions Geomatrix discussed with you appropriate concrete sampling methods in accordance with 40 CFR 761.61 and 761.286. These sections describe sampling porous surfaces for PCBs using a core sampler having a diameter greater than 2 cm and less than 3 cm, and collecting samples to a maximum depth of 7.5 cms.

On behalf of the City, Geomatrix used the core sampling method outlined in 40 CFR 761.286 to resample the locations with the highest reported concentrations of PCBs in each of the four stockpiles previously sampled by Frey (Stockpiles 1 through 4). In addition, Geomatrix collected samples from the upper and lower portions of the digester and the four stockpiles of concrete not previously sampled by Frey (Stockpiles 5 through 8). The locations where core samples were collected under the direction of Geomatrix are shown on the attached Figures 1 through 7. Frey's sampling locations are shown in their attached December 16, 2003 Concrete Rubble Sampling and Concrete Disposal letter.

Under the direction of Geomatrix, a total of 77 samples of concrete or rock were collected as follows:

- 21 core samples from the upper portion of the digester;
- 20 core samples from the lower portion of the digester;
- 1 core sample from each of Stockpiles 1 through 4;
- 18 cores samples from Stockpile 5;
- 4 core samples from Stockpile 6; and
- 5 core samples from each of Stockpiles 7 and 8.

Mr. Max Weintraub  
US EPA Region 9  
April 2, 2004  
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DRAFT**

Prior to analytical testing, each sample was placed in a plastic ziplock bag inside two additional ziplock bags, which were then wrapped in visqueen plastic sheeting and crushed using a hammer. The crushed concrete was then placed in glass jars.

The samples were analyzed for PCBs using EPA Method 8082 by Calscience Environmental Laboratories of Garden Grove, California. The results of analytical testing are summarized in Table 1 (attached) and are as follows:

- The highest detected concentration of total PCBs in concrete samples collected from the lower portion of the digester was 4.6 mg/kg (Aroclor 1248);
- The highest detected concentrations of total PCBs in concrete samples collected from the upper portion of the digester was 5.4 mg/kg (Aroclor 1248);
- Aroclor 1248 was detected at a concentration of 6.1 mg/kg in the sample collected from Stockpile 1, adjacent to Frey sample location CS15 (59 mg/kg total PCBs in Frey's 0.5 cm deep sample);
- Aroclor 1248 was detected at a concentration of 0.060 mg/kg in the sample collected from Stockpile 2, adjacent to Frey sample location CS17 (7.4 mg/kg total PCBs in Frey's 0.5 cm deep sample);
- PCBs were not detected in the sample collected from Stockpile 3, adjacent to Frey sample location CS19 (0.5118 total PCBs in Frey's 0.5 cm deep sample);
- Aroclor 1248 was detected at a concentration of 0.180 mg/kg in the sample collected from Stockpile 4, adjacent to Frey sample location CS22 (2.377 mg/kg total PCBs in Frey's 0.5 cm deep sample);
- PCBs were not detected in any of the 18 samples collected from Stockpile 5;
- PCBs were not detected in any of the 4 samples collected from Stockpile 6;
- The highest detected concentration of total PCBs was 0.340 mg/kg in samples collected from Stockpile 7; and
- PCBs were not detected in any of the 5 samples collected from Stockpile 8;

The City understands that you met with Mr. Simpson last Friday, March 26, 2004 to discuss these results and you concurred with the following:

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Mr. Max Weintraub  
US EPA Region 9  
April 2, 2004  
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DRAFT**

- The sampling method employed by Geomatrix was appropriate for pre-characterization of the concrete and rock debris and was consistent with EPA protocols;
- At the sample locations sampled by both Frey and Geomatrix, the Geomatrix results should be used for pre-characterization purposes; and
- The results of pre-characterization sampling described in this letter indicate the concrete and rock debris are not TSCA wastes.

Currently the City is planning on transporting the concrete and rock debris to Waste Management's Kettleman Hills, California Class I facility for disposal as a non-TSCA waste. The removal of the concrete and rock debris from the site is expected to commence on April 16, 2004.

Please let us know as soon as possible if you do not concur with our consultant's finding that the concrete and rock debris described in this letter are not TSCA wastes because the results of pre-characterization sampling using TSCA sampling methods are all below 50 mg/kg. We appreciate your assistance with this matter.

Sincerely yours,  
CITY OF RIVERSIDE

[Author's name]  
[Author's title]

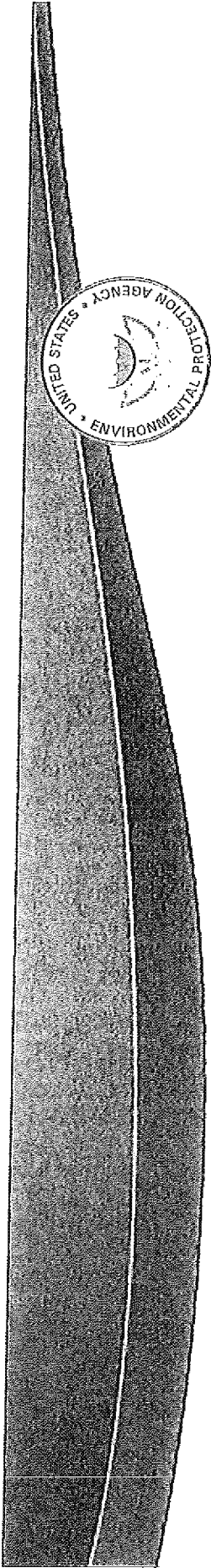
[Second Author's name]  
[Second Author's title]

Attachments Table 1 -- Analytical Results for Concrete and Rock Samples; Polychlorinated Biphenyls  
Figures 1 through 7  
Frey's December 2, 2003 Concrete Rubble Sampling plan letter  
Frey's December 16, 2003 Concrete Rubble Sampling and Concrete Disposal letter

cc: Deborah Prosser, Esq. -- Burke, Williams & Sorensen, LLP  
Timothy Simpson, P.E. -- Geomatrix  
Timothy Wood, R.G., C.H.G. - Geomatrix

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PCB site sampling by the numbers –  
Why you want a 761.61(c) approval from EPA

Following Subparts N and O,

1-acre site

homogenous medium

Characterization - ~450 samples (or 50 composites)

Verification - ~1764 samples (or 200 composites)

@\$120 per analysis, not including labor... \$\$\$\$

5/1/13

U.S. Environmental Protection Agency

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September 2001 Version

§761.30(s) Use of PCBs in air compressor systems

1 Q: *How do I determine whether air compressors that are not associated with natural gas pipeline systems contain PCBs at regulated levels? Are there any assumptions that apply? Is the age of the air compressors relevant?*

A: In general, EPA does not expect that air compressors (not associated with natural gas pipeline systems) will contain PCBs at regulated levels of  $\geq 50$  ppm. However, EPA is aware of cases where air compressors have become contaminated with PCBs due to the use of lubricating oils, such as Pydraul. The use authorization at §761.30(s) was developed to allow the continued use of contaminated air compressor systems provided steps are taken to remove the PCB liquids and to decontaminate or dispose of the contaminated components in the system. Testing of the air compressor system liquids is not explicitly required to determine the applicability of these regulations. If, however, past inventory records indicate that Pydraul or other PCB containing lubricating oils had been used in the past, testing would be prudent.

2 Q: *Are air compressors and air tanks that are contaminated with PCBs <50 ppm regulated for use?*

A: PCBs in air compressor systems are authorized for use at concentrations <50 ppm.

§761.30(u) Use of decontaminated materials

1 Q: *If I clean up concrete contaminated by a post-1987 spill pursuant to state clean-up standards, can I continue to use the concrete? If not, what are the requirements?*

A: You may use non-liquid materials such as concrete that were contaminated with PCBs  $\geq 50$  ppm provided the materials are decontaminated in accordance with a PCB disposal approval, the decontamination provisions of §761.79, or an applicable PCB spill cleanup policy, or if they meet an applicable decontamination standard in §761.79(b). The decontamination standard for concrete under §761.79(b) is  $<10 \mu\text{g}/100 \text{ cm}^2$  and requires that cleanup be initiated within 72 hours of the spill. If the state cleanup met these standards, you may continue to use the concrete. Alternatively, you may comply with the requirements of §761.30(p) for continued use of contaminated porous surfaces.

September 2001 Version

RCRA, or in an approved PCB disposal facility. (See §761.61(a)(5)(i)(B)(2)(iii).)

11 Q: *Must I manifest PCB remediation waste  $\geq 50$  ppm to a RCRA landfill?*

A: Yes.

§761.61(a)(5)(ii) Non-porous surfaces

1. Q: *Section 761.61(a)(5)(ii)(B)(1) allows non-porous surfaces having surface concentrations  $< 100 \mu\text{g}/100 \text{ cm}^2$  to be disposed of off-site in the same manner as bulk PCB remediation wastes with PCB concentrations  $< 50$  ppm, for example, in a facility permitted, licensed, or registered by a State to manage municipal solid waste subject to §258, or non-municipal non-hazardous waste subject to §§257.5 through 257.30. Is this correct, or should the reference be to non-porous surfaces having surface concentrations  $< 10 \mu\text{g}/100 \text{ cm}^2$ ?*

A: The reference as published is correct. drained PCB-contaminated electrical equipment and drained PCB-contaminated articles may be land disposed in a facility that is permitted, licensed, or registered by a State to manage municipal solid waste subject to 40 CFR part 258, or non-municipal non-hazardous waste subject to 40 CFR §§257.5 through 257.30. (See §761.60(b)(4)(i)(A) and §761.60(b)(6)(ii)(B), respectively.) The definition of "PCB-contaminated" includes non-porous surfaces with surface concentrations  $< 100 \mu\text{g}/100 \text{ cm}^2$ . It is consistent to provide for the same disposal option for surfaces having the same PCB surface concentration whether those surfaces are present in drained PCB-contaminated electrical equipment and articles or any other non-porous surface.

§761.61(a)(5)(iii) Porous surfaces

1. Q: *May I clean and re-use a concrete slab with an average surface PCB contamination of  $65 \mu\text{g}/100 \text{ cm}^2$ ? Must I sample and test the subsurface of contaminated concrete?*

A: You may decontaminate the porous surface in accordance with §761.79(b)(4) if you begin decontamination within 72 hours of the initial spill to the concrete. This decontamination procedure does not require you to sample and test the subsurface concrete. You may reuse the

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A: If the PCB concentration of the potting material is <50 ppm and the ballast contains either no PCB small capacitor or an intact and non-leaking PCB small capacitor, you can dispose of the ballast as municipal solid waste (see §761.60(b)(2)(ii)). If the PCB concentration of the potting material is ≥50 ppm and the ballast contains either no PCB small capacitor or an intact and non-leaking PCB small capacitor, you can dispose of the ballast as PCB bulk product waste in a TSCA incinerator, a TSCA/RCRA landfill, a facility permitted, licensed, or registered by a state as a municipal or non-municipal non-hazardous waste landfill, or by means of an approved destruction method, decontamination, or risk-based disposal method (see §761.60(b)(iii)). Regardless of the PCB concentration of the potting material, you must dispose of ballasts containing non-intact or leaking capacitors as PCB bulk product waste in accordance with §761.62(a) or (c).

3 Q: *The definition of PCB bulk product waste states that such waste "includes, but is not limited to" several specific types of materials. If the actual PCB content of a given batch of one of the listed materials is <50 ppm (or even 0 ppm), must the material be disposed of as a PCB bulk product waste solely because it is listed in the definition? For example, must all plastics or all paper automatically be disposed of as PCB bulk product wastes simply because plastics and paper are listed in the definition?*

A: No. The materials included in the definition of PCB bulk product waste are regulated as such only if their PCB concentration at the time of designation for disposal is ≥50 ppm.

4 Q: *What does the phrase "concentration at the time of designation for disposal" mean in the definition of "PCB bulk product waste?"*

A: This means the concentration of the PCBs in the manufactured product at the time it is determined that the product is a waste and before it is mixed with other materials. For example, the concentration at the time of designation for disposal of dried wall paint containing PCBs in a building being demolished would be the concentration of the paint itself prior to demolition, not mixed or diluted with waste from the underlying wall or other debris from the building.

5 Q: *Does this definition include contaminated concrete removed from a building for which the use changes, but there is no demolition?*

A: Contaminated concrete that is removed from a building is PCB waste and

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is regulated for disposal, regardless of whether the building itself is demolished or reused. If the concrete was contaminated by a spill, release, or other unauthorized disposal of PCB liquids, it may be PCB remediation waste depending on the concentration of the PCBs and the date of the spill, release, or disposal. If the concrete contains or is coated with a material that was manufactured to contain PCBs, and at the time of designation for disposal contains PCBs  $\geq 50$  ppm, it is PCB bulk product waste.

6 Q: *Is the definition of "PCB bulk product waste" intended to focus on individual PCB-contaminated units or a larger amount/pile of PCB-contaminated waste?*

A: Both. The definition of "PCB bulk product waste" applies to waste derived from manufactured products containing PCBs in a non-liquid state. The definition would include a single plastic casing from a television as well as a pile or other accumulation of building demolition debris.

7 Q: *I have a site where wire fluff, a material that today would be considered PCB bulk product waste, was disposed of on the land many years ago. If I remove the wire fluff for off-site disposal, would it be regulated as "PCB bulk product waste" or "bulk PCB remediation waste"?*

A: If soil comes into contact and mixes with the wire fluff, the wire fluff is considered a bulk PCB remediation waste because it is waste containing PCBs as a result of an unauthorized disposal. If the wire fluff has not become mixed with the soil, for example, fluff that was stored in piles on a liner or other barrier, it is PCB bulk product waste.

8 Q: *Are residues from electrical transformers PCB bulk product waste?*

A: No. You must dispose of the non-liquid residues removed from electrical transformers as liquid PCBs.

9 Q: *Some scrappers may shred autos and white goods and remove ferrous metal using electromagnets. The remaining primary shredder residue may be disposed of as is, or undergo further processing to recover non-ferrous metals at the same facility or another facility. Is metal recovered from shredder fluff by eddy current separation a PCB bulk product waste?*

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A: Yes, if the metal is contaminated by PCBs that were  $\geq 50$  ppm in the feed material. The definition of "PCB bulk product waste" at §761.3 includes "PCB-containing wastes from the shredding of automobiles, household appliances, or industrial appliances."

10 Q: *A plant processes metal shredding residue (fluff) to recover aluminum. The particulate control system includes a baghouse which generates a dust material containing  $\geq 50$  ppm PCBs. Is this baghouse dust a PCB bulk product waste subject to §761.62 disposal standards?*

A: Yes. The dust is PCB bulk product waste.

General

1. Q: *Why did EPA establish a new waste category and new disposal methods for PCB bulk product waste?*

A: Before the Disposal Amendments were promulgated, large volume, non-liquid PCB wastes such as wastes from the shredding of automobiles, white goods, and industrial scrap had to be disposed of in an incinerator, a chemical waste landfill, or under an alternate disposal approval. EPA believed there were other disposal methods and waste management techniques for this waste that would facilitate its disposal without posing an unreasonable risk.

2 Q: *Section 761.62 seems to say that any material or unit that could possibly contain PCBs should be sampled and tested for PCB content. Is it the Agency's intention to require this type of search for PCBs?*

A: The PCB regulations do not expressly require you to test a material for PCB contamination. However, you are responsible for properly disposing of regulated PCBs. If you are in doubt about whether a material contains PCBs, EPA recommends that you test it.

3 Q: *If bulk product waste is radiologically contaminated, can the waste be disposed of in a landfill used for the disposal of radiologically contaminated waste even though the state does not license, register, or permit landfills used for disposal of these materials?*

A: In accordance with §761.50(b)(7)(ii), any person disposing of